THE RUBBER AGE

ESTABLISHED 1917

COVERS ALL PHASES OF THE PRODUCTION AND MARKETING OF CRUDE RUBBER AND THE MANUFACTURE AND DISTRIBUTION OF RUBBER GOODS

Vol. 40 JANUARY, 1937 No. 4

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The Rubber Age

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Vol. 40 JANUARY, 1937 No. 4

Excellent Year is Forecast For 1937

Rubber Executives Agree that 1936 Was Best Year Since 1929 and Predict Continued Increased Production for Coming Year

ON EVERY SIDE there is proof that the past year of 1936 was the best enjoyed by the rubber manufacturing industry since 1929. Such proof is evident in the financial statements already released, practically everyone of which show earned profits where losses existed before and increased profits where profits were heretofore reported.

There are other definite indications: the employment index is up sharply; wages are higher; figures compiled by the Rubber Manufacturers Association reveal that the value of manufactured rubber products in the first nine months of 1936 were considerably higher than that in the comparable period of the previous year; monthly domestic consumption reached new highs during the past year; Government statistics show that exports increased in both value and quantity; etc.

While official statements from many rubber companies are currently lacking due to pending annual reports soon to be released, especially from smaller manufacturers, there is a general atmosphere of optimism in forecasting conditions for 1937. The smaller plants are continuing production at near-capacity in many instances. The outlook is generally reported especially good for the remainder of the Winter months and well up into the early Spring months.

Tire talk in Akron includes promises of wage and salary increases, price advances and further decentralization of the industry, but management is either silent or non-committal. However, it is known from reliable sources that the wage and salary problem is receiving the serious consideration of rubber management. The unspoken opinion of Akron civic leaders is to the effect that profit statements will add to labor unrest and that wage and salary adjustments are inevitable.

Reports from smaller factories that manufacture novelties and accessories show 1936 to have been the best year in many years, with manufacturers looking for even better volume and profit during the year of 1937. Except for labor unrest and further danger of decentralization, the rubber industry in the Akron area is the most promising for 1937 in many years.

From various sources THE RUBBER AGE has gathered together statements made by several leading rubber executives with regard to probable conditions in the industry during the coming year. These are presented herewith:

Further Improvement in 1937

By James D. Tew

President, B. F. Goodrich Co.

(in a general statement)

THE rubber industry, reflecting an upward trend in American business during 1936 through its close relationship to the automotive industry and the use of rubber in many widely diversified fields, enjoyed the best year it has seen since 1929. Further improvement during 1937 and continued pioneering in development

JAMES D. TEW

of new uses for rubber will, I hope, add materially to gains recorded during the past 12 months.

The rubber industry in 1936 established the best record since 1929 for both sales and profits. This was due primarily to three factors: improvements in general business conditions, elimination of price wars within the industry, and increased production of motor cars and trucks. For 1936, tire sales as a whole reached approximately 52,000,000 units, as compared with 49,000,000 units in 1935. For 1937 we estimate that this total may reach approximately 54,000,000 units.

The estimated consumption in 1937 is predicated primarily on the increase in motor car production. We do not estimate that the number of tires sold for replacement will be appreciably greater than in 1936; as a matter of fact, many automobiles go through their first ownership with the original set of tires. This is due to the marked mileage increase built into tires today. Twenty years ago a tire that lasted 3,500 to 5,000 miles was outstanding—today, the user is greatly disappointed if he does not obtain several times that mileage.

We estimate the total consumption of crude rubber in the United States for 1936 at 573,000 tons, compared with 491,000 tons for 1935. From all indications the consumption in the United States in 1937 will appreciably exceed the 1936 consumption.

The rubber industry during 1936 enjoyed a relatively stable price situation, with no price wars. This was one of the main factors contributing to the satisfactory results enjoyed by most companies in the industry. Improved business conditions resulted in not only a substantial increase in the number of employees during 1936, but a greater number of hours for each employee. The average hourly wage of rubber workers is the highest paid in any industry in the world today. Goodrich employs approximately 15,000 hourly workers, of which nearly 40% have a record of employment of 10 years; and over 12% in excess of 20 years.

An increasingly important factor in future business improvement, as it relates to the rubber industry, is the increased prosperity of the farmer and his ability to purchase implements using rubber. There are at the present time approximately 25 million tractors and implements on the farms of America, and each year more and more of these are being made more efficient by the application of rubber tires.

As yet we have only scratched the surface of the possibilities the rubber industry holds for the discovery and sale of new products. Leaders in the industry look to the future, not only in the hope that it will bring increased business, but in the assurance that it will bring added opportunities for service to all industries and the public.

Prospects Reasonably Bright

By Paul W. Litchfield

President, Goodyear Tire & Rubber Co.

(in a general statement)

IN 1936 we have seen the forces of recovery take more tangible form, gradually lifting the nation back to healthier, happier conditions. Much of our recovery to date has been in consumer or light goods markets, but even now there are strong indications of substantial gains in the heavy industries. Tremendous shortages exist in our capital equipment and this lends support to the belief that further recovery is ahead of us.

The picture is not without such clouds as labor disturbances, war-like rumblings from abroad and heavy domestic tax burdens. Conceivably any of these can halt or retard our rate of recovery, but in the meantime, America seems to be swinging ahead.

Probably outranking in profound significance the current signs of business recovery are the steps we took in 1936 and the further course we will pursue in 1937 toward social and political change. Particularly I have in mind the social security act which became operative on the first of the year.

Here we have a great nation, highly developed along industrial lines, endeavoring to meet some of the problems our industrial age has thrust upon us; problems of great losses through involuntary unemployment and problems of meeting the wants of old age.

PAUL W. LITCHFIELD

I hope we will regard the act as it now stands as an outline of procedure that needs to be painstakingly perfected in the light of our experience with the actual operation of such measures. Certainly it is not likely to prove perfect in its present form, but with the sincere co-operation of employers, workers and the government, progress toward perfection should come rather rapidly.

So far as the rubber business is concerned, 1936 brought improvement and the prospects are reasonably bright for 1937. Many new uses are being found for rubber products and the increasing use of rubber tires on all manner of mobile farm equipment is opening up new markets of vast importance.

A Successful Year Ahead

Harvey S. Firestone, Sr.

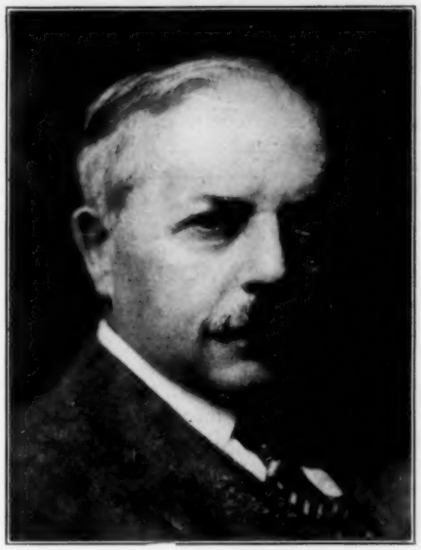
Chairman of the Board, Firestone Tire & Rubber Co.
(in a statement to stockholders)

THE outstanding accomplishment in the industry during the past year was the stability of tire prices. For the first time in recent years, price schedules were well maintained and the industry was free from destructive price wars. This was a material factor in our increased profits. Firestone sales for 1936 showed an increase of 14% on a comparable basis with the previous year.

Many new products and developments contributed to the year's business. Our mechanical rubber goods division has continued to expand and many new uses for rubber and rubber-to-metal parts have been developed. Automobiles, trucks, buses, tractors and railroads are using rubber-to-metal parts in increasing quantities for insulation, shock prevention, quietness and long life. Since the early days of 1936 we have added 650 new articles in this division to keep pace with the rapidly increasing demand for rubber products in all lines of industry.

We have continued to develop our plantations in Liberia, where we planted an additional 9,000 acres last year, bringing our total planted area to 64,000 acres. During the coming year we will obtain rubber from more than 16,000 acres of mature trees. Our rubber preparation factories, warehouses and operating facilities are being expanded to take care of additional production as new areas come into maturity.

HARVEY S. FIRESTONE, Sr.



F. A. SEIBERLING

During the past year Firestone Auto Supply and Service stores have shown a substantial increase in sales and profits. We have opened new stores and have enlarged our facilities in other stores to handle better the needs of car owners. In addition to tires, batteries, brake lining, spark plugs, petroleum products and car services, our stores sell a complete line of auto supplies and accessories, including radios and car heaters. Many of our stores act as distributors to reduce our distribution costs and to give quicker service to dealers and oil stations on our complete line of products.

With Firestone's modern and efficient manufacturing plants, with a line of quality products, and with our enthusiastic and loyal organization, Firestone looks forward to a successful year in 1937.

Brightest Outlook in Years

By F. A. Seiberling

President, Seiberling Rubber Co.
(in a statement to stockholders)

Gross sales of the Seiberling Rubber Company during the period ended October 31, 1936, were $8,545,128, and the net sales showed a gain of 19.9% over the preceding year. Our record has been made in the face of keen competitive sales conditions and increasing raw material and manufacturing costs inadequately reflected in selling prices.

General business conditions of our country, while continuing to show improvement, are still too unsettled to make possible any reasonably accurate forecast for 1937. It may be said of the rubber industry, however, that considerable progress has been made during the past year toward the elimination of destructive policies and unsound practices and that as a result more favor-

able conditions in the industry are in prospect for the coming year.

Seiberling production, sales and profits at the present time are running considerably ahead of a year ago and the outlook for the company is the brightest that has existed at any time since 1929.

Trend to Better Things

By W. O'Neil

President, General Tire & Rubber Co.

(in a general statement)

AMERICA is buying better goods. This is true of practically all commodities on the market today. It is one of the most significant developments of 1936 in the business world and it will be increasingly true in 1937.

Top-quality merchandise of every kind is coming into its own after a long period in which price alone appeared to be king. In motor-cars, in clothing, in homes, in tires,—in fact in all of the present-day necessities of living, the trend to better things is the most outstanding development as the new year dawns.

There is a firmer undertone in the cost of all raw materials. Increased consumption of crude rubber, together with the British-Dutch export restrictions, have combined to bring about steadily-increasing prices of rubber. Lessening of present British-Dutch regulations may be necessary to prevent too rapid an increase in crude rubber prices.

Many of the present tax laws tend to favor the buyer of top-quality merchandise. Some taxes are just as heavy on the cheaper, poorly-built tires as they are on well-built, high-quality tires because tires carry a manufacturers' excise tax based on the weight of the tire alone.

Conditions in the rubber industry should be good for at least the next three or four years. It is by no means a declining industry. More material and much larger units are going through America's rubber factories than ever before. As the new year opens, every indication points to a continuance of the improved conditions that exist today throughout our industry.

An excellent treatise on the financial outlook for 1937 appeared in the Annual Financial Review number of the *New York Times*, published on January 4th, in which the prediction was made that the forward movement of industrial activity would continue into the coming year. The reviewer based his conviction on the momentum of the past season's rise in production, consumption, general prices and on the rapid increase in volume of freight transportation. Specific grounds for the belief that 1936 gains would be continued in the new year were outlined as follows:

1. The great increase of production, which has appeared at times to be equaled if not outstripped by actual consumption. Federal Reserve's monthly "adjusted production index" has lately reached the highest since October, 1929. Monthly steel output has made the same comparison. Cotton spinning and mill purchases have reached the highest mark of a considerably longer period. Railway loadings and railway revenue are the best since 1930.

2. Revival of confidence. Discovery that the drastic and prolonged retrenchment of hard times has accumulated urgent and nation-wide requirements for replenishment and reconstruction. Railway earnings are for the first time making possible purchase of material on the scale of normal years. Complaint of "housing shortage" had become widespread at the year-end; even in 1935, building contracts awarded were less than one-third the average of 1924-30, inclusive. As a consequence of all this, commodity prices have advanced.

WILLIAM O'NEIL

3. Rapid increase of employment. The Labor Department's Autumn index of "factory employment" and payrolls were the highest of any month since the Spring of 1930. This must greatly increase the community's purchasing power; it promises solution of the unemployment problem.

Additional Reasons for Optimism

4. The Stock Exchange's emphatic prophecy. Market "averages" advanced 31½ points in eleven months of 1936, a rise of nearly 28%. The Reserve Board estimates that, since April, 1935, net investment by the outside world in American securities has been $640,000,000. Increased or extra company dividends were so large, last Autumn, that in November total dividend payments footed up $883,000,000, a high monthly record, exceeding the previous record (November, 1930) by nearly $300,000,000. Rise in wheat practically to the 1929 level and reduction to normal proportions of the "world carry-over."

5. Easy money. Unprecedently high American surplus bank reserves. World gold production 35% above 1933, surpassing all records, and more than $1,000,000,000 imported in 1936 into this country from abroad.

Owners of Noble's "Latex in Industry"

The author has prepared an addenda and errata list which represents not only errors in patent numbers and typography but which includes a number of references originally omitted from the book. This list, in printed form which may be readily pasted into the original copy, is available without cost to all purchasers of the book. Address requests to THE RUBBER AGE, 250 West 57th Street, New York City.

Improvements in Rubber Insulating Compounds

By Samuel J. Rosch

Manager, Insulated Products Development,
Anaconda Wire and Cable Company

ONE of the most important criteria of the value of any insulation is its resistance to any and all influences that may impair its stability. Stability of a rubber insulation may be obtained by the judicious use of certain ingredients in the rubber compounding process, by the use of suitable protective coverings, or by the proper combination of both of these features.

The past eight years have seen a real attempt to recognize the important factor of stability in rubber insulations. To accomplish this, it was necessary to effect improvements in different directions in order to achieve various results. However, in effecting these improvements, it was also necessary to make use of ingredients whose use in electrical insulation had never been tried.

The results obtained with some of these materials, gave indications of the possibilities of using other hitherto untried materials with the result, that rubber insulating compounds have made very rapid and startling progress in the direction of stability,—chemically, electrically and physically. In this discussion, it might not be amiss to review, briefly, the cause which led to the very rapid strides referred to in the past five to eight years.

ASTM—Type A:

In 1916, the ASTM issued a specification for a 30% rubber insulating compound, then designated as ASTM D-27-16T. This grade of insulation as distinguished by its physical, chemical and electrical characteristics, represented the best thoughts of that particular period, both from the manufacturing and consumer interests. This compound ultimately became the national standard for a high grade 30% insulation, later to be known as ASTM Type A.

This compound was recognized for all service up to and including 11,000 volts. In making these recommendations, the specification paid no regard to the size of the conductor or the nature of the service, i. e., whether operating with the neutral grounded or ungrounded; whether furnished with a braid or lead sheathing; whether buried directly in the soil; suspended in the air; installed in an underground duct or in an interior conduit, under water, or under conditions subject to corrosive or deteriorating influences.

In spite of the fact that this specification represented the very best efforts and experience available at the time, nevertheless, the results of performance in service were varying in nature. For example, an ASTM Type A compound made by manufacturer A, would give very excellent results whereas, that manufactured by B, would render very poor service and yet, both makes of insulation rigidly met all of the prescribed physical, chemical and electrical requirements and very often by a very wide margin.

Apparently, the criteria set up for this specification were not capable of weeding out the durable compounds from those which had but a few years of efficient life. It is important to note, that during this entire period, and even for many years after, that chemical analysis was considered the most crucial test of all in determining rubber quality.

Accelerators and Anti-Oxidants in Tires

Very little progress was made during the next few years, due to the fact that the ingredients available to the rubber compounder at that time, were practically the same in number and character as had been used during the past fifteen or twenty years. This deficiency of ingredients was especially noticeable in the field of accelerators whose function it is to either hasten the vulcanization of a rubber compound, lower the temperature at which such vulcanization takes place, or to broaden the range of time at which optimum cure takes place. The accelerators available at that time were of the inorganic type.

About 1921, the rubber tire industry was passing through a period of renaissance, in that they adopted the widespread use of organic accelerators and other vulcanizing agents in their products. The resulting products seemed to have acquired considerable flexibility, life combined with toughness and ability to withstand higher temperatures in service, without undue loss of these essential properties.

In spite of this improvement, it was, nevertheless, found that some of the automotive products still suffered a definite deterioration due to exposure to air and natural aging. This particular form of deterioration is known as oxidation. In the meantime, the chemical industry, spurred on by its successes in developing the newer types of organic accelerators, attacked the problem of oxidation and developed a series of ingredients known as inhibitors, later termed anti-oxidants. The function of these latter ingredients was to prevent or retard the oxidation or deterioration of the physical properties of a particular rubber compound. The anti-oxidant produces its beneficial action either as a catalyst or due to its affinity for oxygen.

In 1925, the tire industry definitely began to incorporate anti-oxidants as a necessary procedure in the process of tire making. Later on, it became necessary to devise some means or yard stick for pre-

This article is taken from a paper on "What is New in Rubber Insulated Cable Design" presented by the author at the annual convention of the American Transit Association, at White Sulphur Springs, West Virginia, September 21-24, 1936.

determining, in a relatively short period of time, the effect of these newer ingredients upon the improvements in natural aging of vulcanized rubber tires. These tests ultimately devised, were known as the Geer Oven and Oxygen Bomb tests. The conditions under which these tests are made will be discussed under aging tests. It seemed that substantial correlation could be obtained between several years of natural shelf aging and the performance data obtained on similar materials aged for a few hours or days in the Oxygen Bomb and Geer Oven, respectively.

Accelerators and Anti-Oxidants in Insulation

The use of these new ingredients was attended by such phenomenal increase in the life and durability of rubber tires and shoes, that it was only natural that some thought be given to incorporating these same ingredients in rubber compounds used for insulating purposes. It was found, however, that only a few of these new accelerators could be suitably used with rubber insulating compounds without detracting from their insulating value but those which were chosen did give definite indications of prolonging the physical life of the rubber insulations, materially.

ASTM—Type AO:

Rapid progress in the use of these newer ingredients in rubber insulating compounds was considerably hampered, due to the chemical analysis requirements of the ASTM specification for Type A compounds in that the color of the various extracts could not be darker than a given shade, a characteristic not possessed by the newer ingredients. In 1936, however, the ASTM recognized the validity of the newer types of rubber insulating compounds by adding to their D-27 specification, a new compound known as AO (anti-oxidant). The reception of the AO compound by the industry was very rapid and a new yard stick of quality on rubber insulation was introduced to the cable industry for the first time, by requiring that AO compounds should not exceed a given maximum depreciation in both the Geer Oven and Oxygen Bomb tests, respectively, after 96 hours.

ASTM—Performance Type:

In 1932, a new insulating compound was added in which the chemical analysis was dropped as a criterion of quality and in its place there was added a requirement calling for a maximum moisture absorption as shown by a change in the S.I.C. (Specific Inductive Capacity) of a 15 foot sample of insulated wire immersed in distilled water, after 1, 7 and 14 days, respectively. In view of the fact that this insulating compound had no chemical requirements, but depended entirely upon its performance tests as a criterion of quality, this particular compound was known as ASTM Performance compound, and was made to ASTM specification D-353.

Soon other compounds were produced having greater resistance to the effects of oxidation in both the Geer Oven and Oxygen Bomb tests with chemical analysis as a minor consideration or completely eliminated. Thus, performance requirements gradually became one of the most important yard sticks, other than the electrical properties, for determining the suitability as well as the durability of electrical insulating compounds.

Further Trends in ASTM Specifications:

Committee D-11 of ASTM, which concerns itself with the subject of rubber compounds, recognizing the trend of the times, made the following changes in the 1934 and subsequent revisions of the standards for rubber insulating compounds:

(a) ASTM Type A was divorced from Specification D-27 and became D-393-34T.
(b) ASTM Type AO became the basic 30% compound and is now known as D-27-35T.
(c) ASTM Performance type compound was left unchanged and now becomes D-353-35T.

Effect of Trend Upon Other Specifications:

These trends have become reflected in other important industry specifications, as follows:

(1) The ASA has definitely recognized the AO type of compound as a national standard.
(2) The Federal Specification Board changed its specification No. 587 to a new designation known as HH-I-531, dropping the voltage range from 11,000 to 5,000 volts and adding performance requirements, similar to those stipulated in ASTM specifications.
(3) This same specification also made a definite distinction between rubber insulations for general purposes and those to be used strictly in wet locations.
(4) The Federal Specification Board has recently replaced Spec. HH-I-531 with a new general purpose rubber specification of a Super-Aging Grade, where severe accelerated aging tests have replaced the chemical analysis requirement previously considered indispensable by the Government chemists.
(5) The U. S. Navy in their latest specifications for cables intended for shipboard use, specification 15-C-li, have incorporated accelerated aging requirements for their various rubber compounds.
(6) The U. S. Coast Guard in their submarine cable specifications have done likewise.
(7) U. S. Submarine Mine Depot specifications for submarine cable, No. 48-3E, has followed suit.
(8) The Federal Specification Board in their recent revision of specification JC-101a covering Code grade insulation have eliminated the chemical analysis requirements, claiming that over 8,000 such tests have proven meaningless as far as determining cable quality was concerned and have substituted for this requirement, a suitable aging test for Code grade of insulation.
(9) The National Board of Fire Underwriters have recently issued to the industry, an announcement of their intentions to drop the chemical analysis requirement from their present specification of Code wire and substitute in its place suitable aging tests similar to those adopted by the Federal Specification Board, for the same type of compound. This change is made after 25 years of experience by them with chemical analysis of rubber compounds.
(10) The National Electrical Manufacturers Association (N.E.M.A.) has adopted a performance compound without chemical analysis as one of their high grade building wire and cable insulations.
(11) Power Committee No. 3 of the American Transit Association has just completed favorable consideration of the latest revision of ASTM AO and Performance Types of rubber compound, by adapting them in suitable form to the requirements of the Association.

Factors Affecting High Voltage Rubber

In the earlier part of our discussion, we have made note of the fact that some of the specifications for 30% insulations, have lowered the voltage range from 11,000 to 5,000 volts. This was due to the fact that many of these insulations had been recommended for high voltage service with no other considerations behind them than the fact that they had a high rubber content, high tensile strength and high insulation resistance. Whereas these rubber compounds were satisfactory for services up to 5,000 volts, troubles due to corona began to manifest themselves on these compounds, when used on services above 5,000 volts.

It was soon felt that the electrical phenomena occurring at higher voltages could not be taken care of by such items as megohms, chemical analysis, high voltage strength, tensile strength or rubber content. A new set of criteria had to be developed for determining the suitability of rubber insulating compounds at the higher voltages. Both the I.P.C.E.A. (Insulated Power Cable Engineers Association) and the ASTM have committees which are actively engaged at the present time in formulating such tests for high voltage compounds as ozone resistance, severer dielectric strength tests, accelerated voltage tests and other tests necessary for this type of insulation.

The recognition of the foregoing, plus the fact that certain sizes of conductors were too small for satisfactory operation at a given voltage, due to the possibility of internal corona cutting of the rubber insulation, are steps in the right direction and will undoubtedly be the means of considerable decrease in rubber insulation failures at higher voltages.

Moisture Resistance of Rubber Compounds

A very important observation to be noted is that a universal recognition is now being accorded the fact that rubber insulating compounds are not moisture proof, but rather moisture resistant and that the degrees of moisture resistance may vary considerably for different rubber compounds.

Another important point is the recognition of the fact that as far as moisture resistance of a rubber insulating compound is concerned, this can best be determined, not by a physical observation of the weight of moisture absorbed after a given length of time of exposure to water, but rather by the change in its electrical properties, a criterion much more suitable for judging the moisture resistance of such insulation than that determined by physical means.

(To be continued)

Modified Rubbers in Road Tars

IN EARLIER investigations carried out by the Technical Research and Development of New Uses Committee of the Rubber Growers' Association it was determined that vulcanized rubber formed stable dispersions with all types of tars while unvulcanized rubber was compatible only with low temperature and vertical retort tars. Experiments to determine the effect of modified rubbers in road tars have also been concluded recently and are reported by Messrs. D. D. Pratt and R. Handley in the R.G.A. *Bulletin* for September, 1936.

Two grades of Tornesit (chlorinated rubber), representing the lowest and highest viscosities obtainable, were used in the experiments. Both forms, which dissolved readily, increased the viscosity of high-temperature tars and resulted in novel rubber-tar products possessing considerable elasticity. This latter effect was produced by the addition of 5% of chlorinated rubber in a thin road tar. Harder rubber products were produced by increasing the proportion of Tornesit, a tough elastic material resulting from the addition of 20% in the tar.

Blending of chlorinated rubber with high-temperature tars was carried out by heating an intimate mixture of the two components at 80° to 100° C. for two hours with constant stirring. Tornesit of the highest viscosity (200 seconds) yielded a stronger and more elastic product. It was found that the tar oils became increasingly paraffinoid when chlorinated rubber was blended with vertical retort or low-temperature tars to such an extent that the stability of the final rubber-tar product decreased considerably. The combination of vertical retort tar and chlorinated rubber resulted in a slightly better product than that composed of low-temperature tar and chlorinated rubber.

In experiments to produce binding agents composed of modified rubber, tar and other ingredients, the stone filler was added to the tar product in the ratio of 4 to 1, and the mixture heated and stirred at 80° to 90° C. With all grades of granite, ranging from chippings to dust of <40 mesh I.M.M., the binding power was good, and the cooled masses could not easily be disintegrated. When slight pressure was applied to the mix while hot, dense, well-bound blocks were obtained which retained the resilient features of the binder, particularly in the blocks containing granite dust.

The experiments also disclosed that rubber hydrochloride behaves similarly to chlorinated rubber in combination with tars, being readily soluble in high aromatic tars and yielding homogeneous, stable products slightly less elastic than those produced from chlorinated rubber and tar mixtures. The rubber hydrochloride-tar products, however, were found to have greater adhesive powers.

Nitrite crumb rubber was blended with tars under conditions strictly comparable to those involved in the chlorinated rubber-tar mixtures, the results indicating that while this modified rubber was more compatible with high-temperature tars than normal rubber, the resulting materials were inferior in stability to the chlorinated rubber and tar products.

In addition to the experiments on modified rubbers in road tars, the co-authors give the results of tests conducted on chlorinating rubber by the action of gaseous chlorine on either rubber in solution or solid rubber. Employing liquid chlorine at —40° C., they report that rubber is readily chlorinated at this low temperature in 10 minutes to a product containing approximately 60% of chlorine. The effect of the liquid halogen at this temperature is to convert the rubber first into a plastic jelly-like mass and, when sufficient time is allowed, to dissolve the rubber. On removing chlorine, the chlorinated rubber is obtained as a colorless, vesiculated product. According to the report, this chlorination method has been successfully applied to vulcanized rubber, nitrite crumb, nitrosite rubber and rubbone.

NEW ORLEANS as a Manufacturing Center

City Invites Manufacturers Citing Advantages of Location and Near-by Sources of Raw Materials

WITH business giving every indication of continued improvement, and with the prospect of continued decentralization of the rubber industry away from Akron, recognition of the special facilities suitable to rubber manufacturing and merchandising problems offered by various metropolitan and suburban cities and towns is inevitable. One city which claims to have apparent advantages over many others is historic New Orleans, according to the local Association of Commerce.

The position of Louisiana's chief center, one of the country's great ports, permits the importation of crude rubber and eliminates all interior freight rates, for one thing. Sulfur, carbon black, pine tar and cotton fabric are all produced in the immediate vicinity of the city, while the variety of the transportation systems operating out of New Orleans offer advantages in prompt and economical distribution to many parts of the country.

Economic conditions in industry have resulted in many geographical changes for many years. One of the noteworthy examples is the movement of the textile industry from its original New England stronghold to the cotton producing states of the South. New Orleans' location within 300 miles of the most productive long staple market in the United States offers an additional advantage to tire manufacturers, it is pointed out.

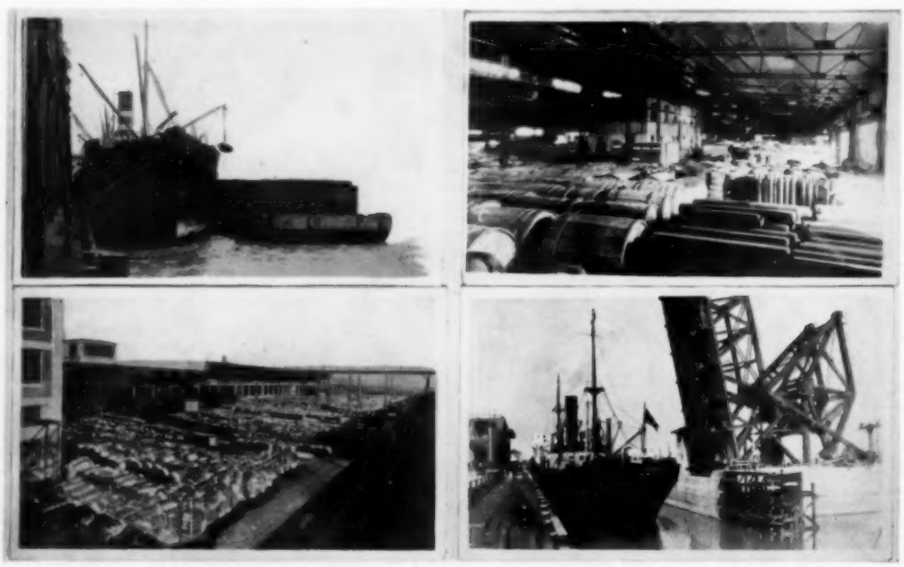
Sulfur and carbon black, two essential raw materials for the rubber manufacturing industry, are especially produced in quantity in Louisiana. The largest natural gas field in the world is within 300 miles of New Orleans and the accumulated total production of sulfur in the state passed the ten million ton mark in 1935. It is interesting to note that in this year sulfur production approximated the average annual output for the entire 26 years of recorded production.

At the present time a large sulfur deposit is being worked within 50 miles of New Orleans. It appears logical, therefore, that the location of a rubber factory in the vicinity of the Southern city would result in a saving of certain raw material costs, including sulfur and carbon black, states the Association of Commerce.

As a great port and a leading industrial city, New Orleans, naturally enough, has broad foreign and domestic markets for the distribution of its manufactured products. Trunk line railroads, aggregating over 40,000 miles, operate from the city. Frequent and regular coast-wide steamship service is offered to the Atlantic, to the Pacific and to ports on the Gulf. There are nearly seventy steamship lines operating out of the city to Europe, Central America, Mexico, the West Indies, South America and to other parts of the world.

Several barge lines offer adequate service connecting the city with communities on the Mississippi, Missouri, Ohio and Warrior Rivers. An inland waterway, nine feet deep, is now in operation between New Orleans and Houston, Texas, as part of the projected canal extending westward to Corpus Christi, Texas, and eastward to the Atlantic Coast. Excellent motor freight service, operating on good highways, con-

(Continued on page 228)



UPPER LEFT: Showing direct transfer of foreign merchandise from ocean carrier to inland barge.

UPPER RIGHT: Steel transit sheds showing a wide diversity of products handled at New Orleans.

LOWER LEFT: Receiving shed of public cotton warehouse with a capacity of 400,000 bales.

LOWER RIGHT: Navigation canal connecting Lake Pontchartrain with the Mississippi River.

The Role of Rubber in Manufacturing Movie Props

Both Sheet Rubber and Latex Make Possible Fantastic Effects in the "Make Believe" World of the Motion Picture Industry

By J. Edward Tufft

(Los Angeles Correspondent)

THE use of rubber in the moving picture industry is increasing rapidly, and with novel new applications made possible through the introduction of latex there seems no end to its value in props, make-up, and stage paraphernalia. The Rubbercraft Corporation of California, Ltd., Los Angeles manufacturers of rubber appliances of all kinds, has probably worked more closely with the moving picture industry during its development than any other manufacturer in the country and has contributed materially to a vast number of major moving pictures made in recent years. Rubber props are not used to deceive the public but generally for the sake of safety, particularly in mob and riot scenes.

In meeting the requirements of the picture industry it is necessary to keep a large supply of stock items on hand as well as to co-operate with experts connected with the studios in planning and fashioning new props. Among stock items that Rubbercraft always has on hand are rubber rifles, pistols, fish of various kinds, sponge rubber hand grenades, spears (five different types), roast chickens, squabs, ducks, etc., hand-cuffs and other "yegg" and G-men paraphernalia, as well as the various utensils used in the kitchen, notably knives, forks, and spoons. There is a frequent demand for most of these items in the regular run of "theatre stuff."

It is interesting to note that in the filming of the now-famous picture "Trader Horn," Rubbercraft shipped 500 rubber spears to Africa. In various pictures rubber hand-cuffs have come in handy for it is then possible for a handcuffed man to bring both his fists down on a man's head in a realistic fashion and squeeze a bulb of red liquid at the opportune time giving the effect of drawing blood.

Molded items are in keen demand for most major pictures and until recently constituted practically the whole of the output for props. Quick and efficient service in preparing molded items for moving picture productions is essential. For example, in a recent picture where 25 guns were needed the call came at noon. The plaster patterns were ready by the next morning, representatives of the company working with studio specialists; by three o'clock in the afternoon the aluminum molds were ready; and by evening the molded guns were completed and delivered.

Inasmuch as the moving picture industry is so important in the Los Angeles area local rubber manufacturers are able to get perfect cooperation from firms making aluminum molds and other accessories when speed is required, as it usually is.

No effort is too great and no detail too far fetched when it comes to securing a perfect reproduction of an animal or reptile. For example, in filming the picture "Murder in the Zoo" it was necessary to have a life-like rubber alligator. Here is some of the work that was involved:

A live alligator in his dormant state was taken from the alligator farm to the studio. A plaster cast was made over his entire front portions. This cast was divided into ten sections. From these ten sections (or patterns) aluminum molds were made. A core was made centering the interior space. The ten sections were provided with lugs and pressure on the rubber compound was accomplished by tightening the lugs by means of bolts, this action enabling the molds to be used as presses. The exteriors of the twelve alligators so fashioned were colored by hand by artists and

With the exception of the large center figure and the mask to its left all of these movie props are of latex composition.

mounted on small trucks that operated beneath the water, giving life-like action.

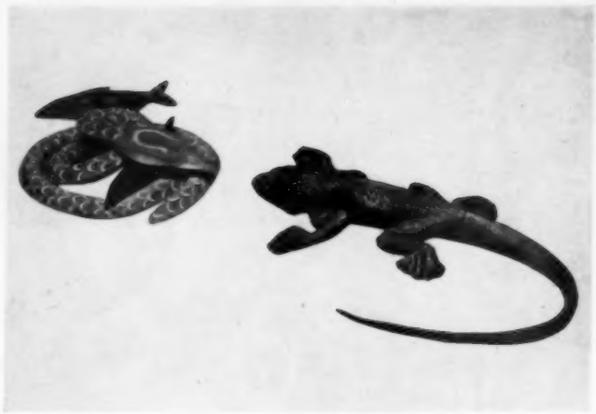
Thirty boa constrictors were made for another picture. A real boa was taken from a zoo and laid on the grass where he was accurately measured by a Rubbercraft salesman, and who ever knew a salesman to have a more delicate job to perform? Actually there was a near accident to the salesman in this stunt. A boa, it seems, is gentle when his head is covered with the proper textile material. The caretaker by mistake covered his head with the wrong material. In the midst of the measuring operation the boa became too active for comfort to the humans concerned. However, no accident occurred. He was then photographed. The rubber model was made with a roll of sheet rubber wound with tape. Coloring was done by hand. The mouth was fashioned so that it opened and closed, and the serpent was mounted on an invisible little truck that ran on a zigzag track giving a true serpent motion. Thirty such boa constrictors, which in the picture could not be distinguished from live boas, were made by Rubbercraft. They were turned out in fast time.

"The Country Doctor," a picture featuring the Quintuplets, called for the manufacture of rubber babies. Rubber manufacturers, you see, stop at nothing! Exact specifications were secured from Dr. Dafoe. Duplicates were made in clay, approved by the doctor. From the clay plaster patterns were made, then aluminum molds and the babies finally turned out exact birth size in sponge rubber. They were tinted to represent the natural color of babies by studio artists.

And speaking of sponge rubber, there was a sad day in Los Angeles when Metro-Goldwyn-Mayer cleaned out the City of Los Angeles. This happened during the filming of "Mutiny on the Bounty." The wooden decks of the vessel were too noisy for this talky-wise world. Buyers were dispatched to all rubber sources in the city and sponge rubber was bought wherever it could be found. The decks were covered and the job of filming went ahead on schedule.

Sponge rubber bumpers on automobiles, sponge rubber jackets for noisy motors, and various other similar items are part of the day's work.

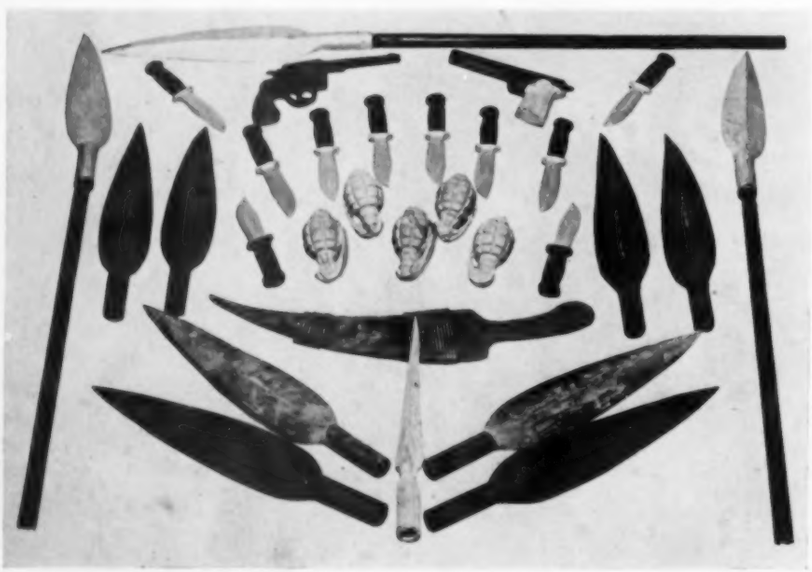
Until recently sponge rubber, sheet rubber and molded items had to be depended upon for most rubber props, etc., but recently latex has played an increasingly important role. The studio geniuses doing this sort of work are not always keen to tell their secrets but there is nothing too difficult for them to tackle in brave spirit.



Rubber serpents and lizards are two items used by the studios to create realism for the movie-goer and safety for the cast.

Two good examples of the use of latex were seen in "Alice in Wonderland" and in "Babes in Toyland." Where formerly papier maché, glue, and other materials were used for fashioning faces results are now obtained with latex. First a perfect impression of an actor's real face is made and into the mold thus made latex is sprayed, making a very thin rubber mask identical with the actor's face. The bogey face that the actor is to wear then is made with this perfect fitting inner shaping so that expressions of the real face are readily transferred to the false face. This accounts for the expressions on bogey faces in "Alice in Wonderland." This type of mask-making is a comparatively new art.

Rubber feet have been built by different methods, but Rubbercraft, in the picture "Babes in Toyland," used large aluminum molds giving the shape of feet desired and fitted these over a pair of tennis shoes. These molds were also built in sections with lugs join-



The galaxy of armaments seen at the left are all made of rubber and are carried as stock items by several manufacturers to meet with the often unexpected demands of the studios. These implements, all of them made by the Rubbercraft Corporation, include spears, spear-heads, pistols, knives, machetes, hand grenades, etc. The gangster type of picture created a keen demand for many of these rubber props.

ing sections so that pressure could be secured by tightening the lugs. The sponge rubber left the tennis shoe form for the feet but took the outer form of the mold.

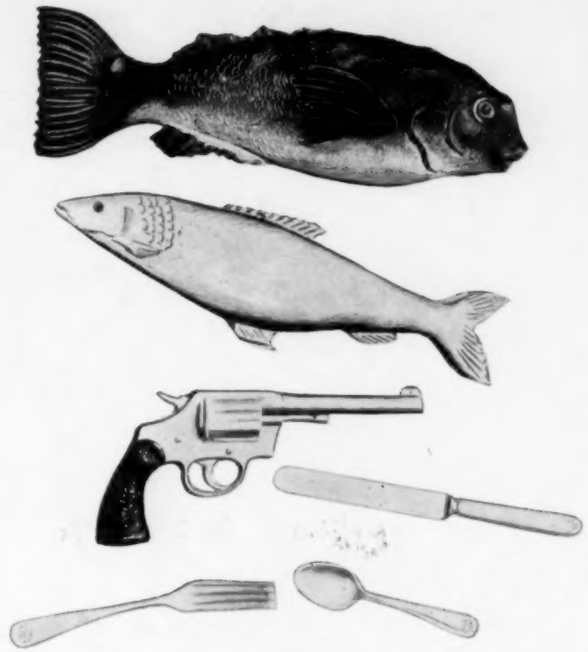
In "The Trail of the Lonesome Pine" a girl could not possibly have wandered barefoot through the places where one actress was required to wander. It was necessary therefore for her to have her feet covered with rubber but they had to photograph like natural feet. This was accomplished with latex (slightly compounded) in some such manner as the bogey feet mentioned above.

In the "Poor Little Rich Girl," featuring Shirley Temple, the dolls were made of rubber. Exact models were made from photographs of girls so that the proportions were true to nature. Naturally, when the dolls began to dance (as called for in the script) the rubber dolls were removed and real girls, photographed in miniature, were substituted, but few could tell the difference.

Finishing work in every case is done by artists in the studios, and incidentally there are men in Hollywood with the most specialized of specialties in the use of rubber. For example, in a recent picture where it was desired to introduce pre-historic animals a specialist on making such items as rubber fins, scales, etc., got in his work. Lizards of ordinary size were rigged out with these ancient appendages and early-day armament features and turned loose in a miniature forest. The man who made those appendages is a specialist in that line and it is doubtful that any one else in the city could have done the job so perfectly. When photographed among the small, miniature trees the improved and rubberized lizards looked like actual monsters.

Naturally, the pneumatic feature is also extensively used in the manufacture of rubber props. One of the first times it was ever used was in the "Hunchback of Notre Dame," the late Lon Chaney getting his marvelous back curvature from Rubbercraft.

A clever use of the pneumatic feature is to be used in a picture now being made. Pretty girls tossed into the water will be in no particular danger of drowning as rubber tubes will be fitted over their shoulders, the tubes containing capsules of carbon dioxide. Squeezing these capsules at the proper moment releases the gas into the tubes providing sufficient buoyancy to keep the girls from going under.



Rubber fish, pistols and eating implements are types of props for which there is continual call from the picture studios.

The introduction of latex into the prop making industry is probably the biggest advance made in recent months. It seems that there is no end to its uses in its liquid form, the fact that it can be sprayed, etc., gives it ample manufacturing flexibility. There are new uses made with it every day.

Marbonized Rubber Adhesives

PROVIDING a permanent bond over a wide range of temperature fluctuations and said to provide a stronger and more lasting bond than most other adhesives, a complete line of Marbonized Rubber Adhesives has been developed by the Marbon Corporation, 469 East Ohio Street, Chicago. In addition, these adhesives provide a compensating factor for unequal expansion and contraction of adhered surfaces, according to the manufacturer, and will adhere any surface to any other surface including rubber to glass, metal, flooring, fabric and tile; glass to wood, metal and glass; paper to paper and burlap; metal to brick; tile to flooring; etc.

Four types of Marbon Adhesives have been introduced: No. 2100 is black and tacky, offering a bond for general adhesion problems, the bond remaining permanently tacky for months after application; No. 2200 is similar in appearance and is capable of forming a bond of high tensile strength once the adhesive has set, maximum strength being obtained in 1 to 3 days; No. 2300 is a clear, moisture-proof, cold-setting adhesive for general industrial and household use as well as for application where resistance to the chemical action of acids, alkalis and salts is required; No. 2400 is also clear and moisture-proof and is a permanently tacky adhesive having wide application in the production of transparent adhesive tapes, masking tapes, etc., in addition to possible application as a laminating adhesive for cellulose acetates, such as Cellophane, Protectoid, Kodapak and Pliofilm. Both Nos. 2300 and 2400 have high dielectric strength, good insulating properties and are resistant to ozone and ultra violet light, according to Marbon.

The new adhesives may be spread with a spatula in their heavy form. They may be diluted with high flash naphtha, gasoline, toluene or xylene for brushing, spraying or application from a roll. They should be applied to the more rigid of the two surfaces to be adhered, one coat being sufficient. Articles to be adhered should be either air or oven dried until the adhesive surfaces become very tacky, this condition generally depending on the solvents used for dilution. A short drying oven or hot air blast will dry the adhesive sufficiently in five minutes or less and articles may be adhered after air drying for 15 to 20 minutes. The manufacturer points out that if surfaces are not smooth or are faces of rigid articles, a press may be used to obtain uniform adhesion to all parts.

Plymouth's Rubber Mountings

UP until the introduction of the 1937 automobile models practically all cars using rubber mountings in connection with either chassis or engine utilized the "biscuit" type of mounting. The recent automobile show, however, revealed the fact that a new type of

Spool-shaped rubber mountings support Plymouth bodies.

mounting had been adopted, pioneered by the Plymouth Division of the Chrysler Corporation. This new type of mounting (illustrated herewith) eliminates metal-to-metal contact, reduces car vibration and also reduces the possibility of road noise.

Welded and bolted to Plymouth's rigid X-frame, both vertically and horizontally, are steel supports, similar to outriggers. These supports enclose spool-shaped rubber mountings to which both frame and safety steel body are bolted. Body bolts are tightened against steel spacers which limit movement and provide strength. Instead of squeezing down the rubber under the pressure of the body bolts (pressure which eventually destroys the effectiveness of the rubber) the new mountings support only the weight of the body. In this manner the body "floats" free of the frame and does not pick up "hammer blows" of the road.

Nevillite—New Hydrocarbon Resin

A NEW crystal-clear thermoplastic hydrocarbon resin has been developed by the Neville Company, Pittsburgh, Pennsylvania, and has been introduced under the trade name of Nevillite. Designed for coatings of maximum color retention, the new resin is said to be extremely light-stable, being of original water-white color and having good resistance to after-yellowing influences. Tests have indicated that Nevillite will yellow less than chinawood oil.

Readily soluble in petroleum solvents of all boiling ranges, Nevillite remains in solution at extremely low temperatures and in all concentrations. It is also soluble in aromatic solvents and most of the common industrial solvents. It dissolves in higher mineral oils, petrolatum and paraffin; is compatible with most natural and synthetic resins; blends with metastyrene and other colorless resins; and has the following characteristics (other than those already mentioned): permanent thermoplasticity, neutrality, transparency, non-saponifiability, tasteless and odorless, and is brittle solid at room temperatures.

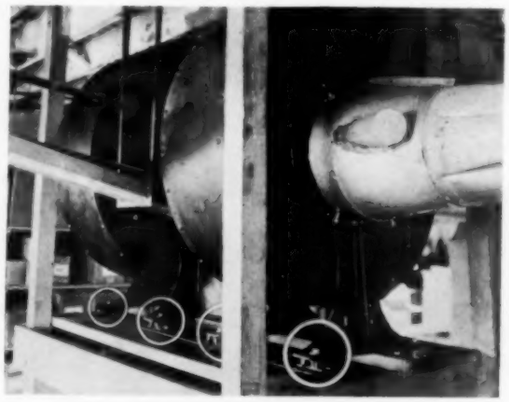
Due to its non-saponifiable and non-acidic nature, Nevillite is expected to prove valuable for rubber compounding, particularly for white rubber goods of high quality requiring a neutral gum. It is also adaptable as a filler, softener and tack-producer in rubber products.

Mountings Solve Vibration Problem

IN view of the trend towards heavier, higher speed machinery, many equipment builders have recognized the necessity of incorporating into machine design provisions for minimizing the effects of vibration. However, there are thousands of machines now in use for which no such provision has been made. The users seldom feel justified in going to the expense of having special mountings engineered to their needs, nor are they so equipped to handle this problem in their own shops.

This situation was recently faced by the Indiana Ox Fibre Brush Company of Seymour, Indiana. Located on the third floor of their plant is a double blower which has presented a serious vibration problem. This blower, weighing approximately 1000 pounds, is driven with a belt between the two fans. Power is supplied by a 15 h.p. motor at 1800 r.p.m., which makes for about 1500 fan revolutions per minute over a driven pulley 10 inches in diameter at 7½ foot centers. The blower is mounted on a raised platform and the vibration resulting was not only affecting the building structure immediately surrounding the machine but was also being transferred to the floor above to such an extent that considerable space was rendered useless.

The problem was solved by mounting the blower on a series of rubber-to-metal mountings of the double shear type which permits attaching of machine base directly to top of insulator. The rubber mountings



Circles denote double shear type rubber mountings.

were of the standard Goodrich design. This type mounting will support a maximum load of 50 pounds per inch. Therefore, to support the 1000 lb. load eight insulators, each three inches in length, were installed at various points under the frame, as shown in the accompanying illustration.

Hale Celebrates Centennial

Starting with the Manufacture of Rubber Diving Suits in 1837 Hale Company Has Pioneered in the Production of Various Rubber Products

AMONG the scores of rubber manufacturing companies which have made history in the industry only one has achieved the distinction of conducting business for 100 years without a single change of corporate name, viz: the Alfred Hale Rubber Company of North Quincy, Massachusetts. This organization, which originally manufactured only rubber diving equipment and today produces the well-known line of Rajah rubber soles and canvas shoes, is currently celebrating its centennial.

The Alfred Hale Rubber Company had its beginning in 1837, in which year the founder and his wife turned the kitchen of their frame dwelling in Malden, Massachusetts, into a miniature factory, a common procedure at the time, and laboriously pressed sheets of rubber and cloth together with cement to form a triple, rubberized fabric, which was dried and cured by exposure on the roof of his dwelling, and later cut and sewn into diving suits.

Although Alfred Hale was a born manufacturer, he was a poor merchandiser. Fortunately, he had a brother, George, with a merchandising mind. The two soon got together and organized the Hale company, one doing the manufacturing, the other the selling. This combination soon produced sufficient business volume for the young concern to build in 1841 a small, wooden factory in South Boston on what is now Covington Street. There the company remained for three generations.

By this time, Charles Goodyear's discoveries had become known and rubber could be treated as something solid and substantial. Consequently the market grew. Steadfastly, Alfred Hale continued to make his diving "dresses." They were the rock upon which the company was founded and they were to remain the rock for many years. But, Alfred agreed, if George wished, he had no objection to making other things related to rubber and thus, while there is no evidence that the Hale company ever really originated any great development in rubber goods, it is reasonably certain that the company at one time or another, was the first to manufacture in the United States and to popularize some 60% of the articles now made out of rubber.

Early Hale Rubber Products

It is impossible to list all these various articles for it would be a lengthy undertaking, but a few should be mentioned. There is Bay State Cement, for example. Originally made by Alfred Hale for cementing rubber, it proved to have a host of uses in many trades as well as about the home and farm. In 1875 Hale patented a rubber-covered baseball, the first to be made in the world. These were simply rubber balls stuffed with various elastic materials as feathers and string, nine and a quarter inches in diameter and weighing five and a quarter ounces. They were "the best in use", so the company's advertising announced, and probably the business would have grown had not the game itself developed in such a way that a rubber covered ball was replaced by the leather article of the present.

In the same year, 1875, the Hale company also announced that they were making a complete line of rubber-covered footballs, in diameters of "5, 6, 7, 8, 9 and 10 inches"—also "the best in use." These footballs were, of course, not the oval pig-skin of the present, but a round ball something like the basket-ball of today in shape.

History Revealed in Advertising

Alfred Hale did not believe in advertising. George did and when, in 1842, he finally prevailed upon Alfred to countenance the opening of a retail rubber goods store in Boston, George began advertising consistently, if cautiously. This retail store, which continued in existence until about 1890, was variously located—first at 67 Water Street, then at 36 Bromfield Street and finally at 23 School Street.

The first advertisement appeared in the Boston City Directory for 1850-1851. It reads, in part: "India Rubber—36 Bromfield Street—under the Church—machine banding, steam packing, water hose, rubber garments, rubber horse covers, rubber wagon covers, rubber air beds, rubber air cushions, rubber life preservers—Every Variety and Description of Air Tight and Water Proof Garments."

By 1875, George was more ambitious and purchased a whole page of the Directory, illustrating his advertisement with a smudged wood cut of a diver clad in a Hale suit with a Hale pump and equipment. The articles offered for sale were as follows: "rubber clothing, horse covers, wagon covers, sheetings, foot balls, cement, soling, cloth, packing, hose, tubing, springs, boots, shoes, gaiters, etc." Given special prominence was this item "Rubber Jewelry in great variety, plain and gold trimmed." And, crowded down in agate type at the bottom of the page was this, "And gloves and mittens, balls, toys, combs, elastic bands, air cushions, syringes, etc."

Undoubtedly, the Hale company did not manufacture all the materials and small wares offered for sale. For example, the hose was definitely not made by the company but sold by it as an agent. So, too, the rubber jewelry—bits of hard rubber carved into various forms such as necklaces, bracelets, pins, brooches and the like, as amber and the various plastics are today. But the rubber garments, the balls, the sheetings and the wagon and horse covers as well as the rubber cement were definitely Hale products and probably others were too—for George is known to have always had his eyes open for new rubber products which he could persuade Alfred to make.

About 1860, David Hale, son of Alfred, entered the business and gradually took over complete charge, as father and uncle shoved the load onto his shoulders.

David Hale apparently did not take a great interest in the business. The retail shop was shortly closed and gradually the factory in South Boston grew less and less active. However, the Hale name was well-known by this time and the company continued to make its diving equipment, its cement and a few other things.

On November 1, 1900, the Hale family, David and his two sisters, finally sold the business. It was taken over by Walter F. Johnson, Edward F. Bragg and Winslow Blanchard. They turned the old company into a corporation which, under the Massachusetts' laws, authorized them ". . . to carry on the business of manufacturing, buying and selling and generally dealing in all manner of rubber goods, crude rubber and other materials used in the manufacture of said goods, of acquiring letters patent and trade marks pertaining to or useful in carrying on the business . . ."

In this new organization, Edward F. Bragg, an experienced rubber manufacturer, was dominant. However, the Hale company was not his major interest; his chief concern was the perfection of rubber machinery and manufacturing equipment. In this he was so successful that he had little time left for developing the Hale company. Thus, during the following 16 years, the company continued on its momentum, but not expanding at all.

Cutler Secured Control in 1916

The present organization of the Hale company came into being in 1916 when the entire corporation was purchased by David A. Cutler, one of the nation's most widely known rubber chemists and modern development pioneers. Taking hold at the very time when the boom of war orders was flooding the veins of American industry with gold, Mr. Cutler almost overnight transformed the aged factory into a hive of industry. In fact, almost immediately, it was apparent that the old South Boston factory was utterly inadequate and accordingly, the company moved to its present quarters at the end of Spruce Street, in North Quincy.

Unlike many manufacturing firms, the Armistice did not mean the closing down of the Hale plant. A process of spreading rubber over fabrics had been perfected and this kept the plant busy. Because the demand for diving dresses was too small to provide a solid basis for the company's plant, Hale, in June, 1921, sold the ninety-year old specialty to the United States Rubber Company, which was better equipped to handle it. Thus the Hale company needed a new staple.

One day, Mr. Cutler was in the office of Coes and Young, Boston shoe merchants. Frederick Young picked up an odd sport shoe and called Mr. Cutler's attention to it, saying that it had just been given to him by Roger Walcott, son of former Governor Walcott, who had recently brought it back from London. It was an ordinary leather golf shoe with a sole and heel of crepe rubber. "Why don't you make something like this?" asked Mr. Young. "I'll bring one in tomorrow!" replied Mr. Cutler. He did. And that was the beginning of the crepe rubber sole in America. Trade-marked "Rajah", the crepe sole became overnight one of the most astonishing fads the country has seen and remains a steady attractive business, forming the present back-log of the Hale company's production.

In no time at all, the company had more orders than it could fill. Agents besieged the Hale plant, begging for soles and the order books at one time held 600,000 soles on order for delivery "as soon as possible." Lacking machinery to cope with the demand, Mr. Cutler enlisted the aid of high school girls, setting them down at long tables everywhere in the factory, even in his own office, giving them scissors with which to cut out the soles by hand until equipment could be installed.

Shortly thereafter, Mr. Cutler put into production another sport-type sole, called the "Halesole". This was an improvement over the black type of sole, largely used for work shoes in place of leather. Because this black sole had the disadvantage of making black marks on floors, it was found objectionable for use in sportswear. Accordingly, Mr. Cutler originated another type of sole, similar in wearing quality and other features save that it was light colored and did not mark floors.

New developments in the "Rajah" sole are being made but it is not the only new development which occupies the attention of the Cutler family. While one son, A. Cushing Cutler, is busy with the Hale plant, the other, David Roy Cutler, is developing one of the most significant of the new rubber manufacturing processes—the Kaysam method.

1937 finds the hundred year old Alfred Hale Rubber Company, the oldest of its kind in America, not heavy with its years but entering its second century alive and vigorous. The old diving "dresses" have been replaced by the "Rajah" soles and heels. The many minor and evanescent products, which were featured between 1840 and 1878, have been dropped altogether.

To the Yankee spirit and tradition has been added the new spirit of modern scientific research and development. The twentieth century has been grafted onto the nineteenth successfully. Few American manufacturing companies reach their hundreth anniversary; none have done so with more favorable promises for the future than this old New England organization—the Alfred Hale Rubber Company.

New Orleans—Manufacturing Center

(Continued from page 222)

nects New Orleans to all points in the surrounding territory.

Central and South America are believed to be the fastest growing countries in the world today. In recent years, the natural resources of these countries have been developed, their population and their wealth have increased and their standard of living has risen. It is believed that these countries offer a fertile field for trade and commerce and the geographical position of New Orleans makes it the closest port to most of this vast, rapidly improving territory.

As ninety-five per cent of the population of New Orleans are native born, that city has an adequate supply of efficient labor, made up principally of native born descendants of Central and Western European races.

Public officials of the state are friendly to new industry, having had passed this year a tax exemption measure. One of the first acts of the new governor, Richard W. Leche, was to announce that his administration would give all the assistance that it can to any individual or group desiring to come into Louisiana to establish an industry or manufacturing plant or to conduct a business of any kind. In a similar tone, Robert S. Maestri, new mayor of New Orleans, made a public statement to the effect that he would do "everything possible to assist all who desire to make investment in New Orleans."

New Equipment

Farrel Hydraulic Belt Press

SEVERAL new features have been incorporated in the design of a new 3-platen hydraulic belt press recently introduced by the Farrel-Birmingham Company, Inc., Ansonia, Connecticut. These features are said to insure accuracy and permanence of alignment as well as improving operating efficiency and reducing maintenance expense. One of the new features is in the construction of the follower plate and the method of guiding it in a fixed path at the same time permitting elongation. This plate is made of Meehanite in a single casting and is annealed to remove casting strains. To prevent endwise movement, the follower plate is held only in the middle by guides on two central tie rods on each side, thus giving it free expansion both ways from the center. Sidewise movement is prevented by other guides on the four tie rods next to the ends.

Adjoining crossheads on the new press, both top and bottom, are held securely in place by tie bolts connecting the adjoining crossheads. An improvement in the hydraulic belt clamp is said to prevent unequal stresses which frequently caused breakage on ordinary types of clamp brackets bolted rigidly to the follower plate. The clamp is now mounted on trunnions attached to the plate and additional support is provided by guide brackets attached to the top crosshead. The belt pull is thus divided and equalized between the two points of support. The pivotal mounting also prevents excessive stresses in the clamp support if the follower plate drops unevenly or jerkily when the press is opened.

The new Farrel hydraulic belt press has been designed to conform to the production requirements of the modern rubber factory. It has three rolled steel plates, 35 inches wide by 31 feet long, drilled for steam circulation in several separate sections to insure uniform heating of the entire surface. Gasket type plugs provide a leakless closure, while the ends of the plates are both air and water cooled to provide a gradual temperature decrease from the curing area to the ends. The top and bottom crossheads are of cast steel and the cylinders are cast integral with the bottom cross members.

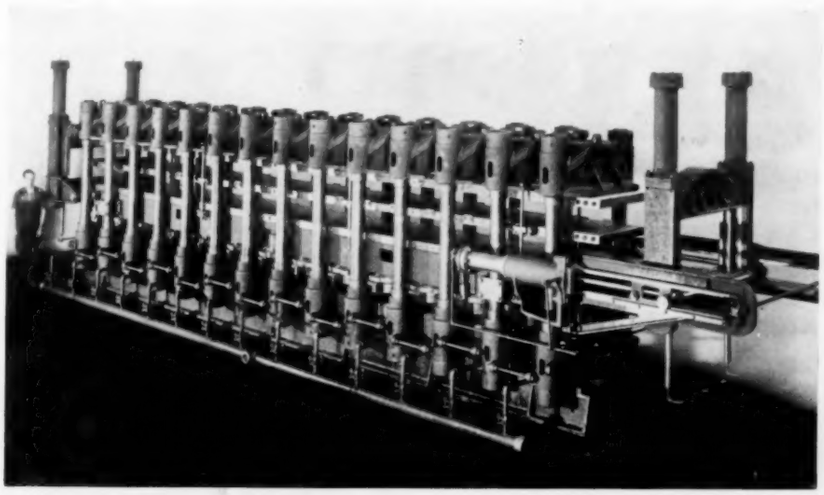
Allpax Gasket Cutter

THE Allpax Gasket Cutter has recently been developed by The Allpax Company, Mamaroneck, N. Y., and is said to cut gaskets quickly from such materials as rubber, duck, canvas, cork, felt, cardboard, compressed asbestos, etc. Simple to operate, according to its manufacturer, the new tool cuts gasgets from 1 inch in diameter to 36 inches, with any width of flange and with clean cut edges. It will operate in thicknesses up to 5/8ths of an inch. Cutting is

accomplished by double-edge blades, two of which are mounted in holders attached to thumb screws which operate in a slot so center distances may be accurately gauged. A center point can be inserted at one end for cutting circles from 1 to 12 inches in diameter. Extension arms make it possible to reach the 36 inch diameter size. The gasket cutter is furnished in a kit with six double-edge blades and an 18 x 18 inch varnished panel wood cutting board.

National Pump Accumulator

DESIGNED for either 750 or 1,200 pounds operating pressure, the National Rubber Machinery Company, Akron, Ohio, has introduced a laboratory-type pump and adjustable accumulator. It is especially intended for small platen installations or for laboratory hydrostatic testing. There are two units, the smaller of which is equipped with 14 weights, each weight being equal to 50 pounds pressure per square inch, while the second, or larger, unit has 19 weights, each of which is equal to 60 pounds pressure per square inch. The units are equipped with a ¾-inch control valve. They are said to be quiet in operation and may be equipped with a receiving tank for receiving the outlet water from the press or testing cylinders, a conservation feature, according to the manufacturer.



The new Farrel-Birmingham hydraulic belt press, seen at the right, was especially designed to conform with production requirements of modern rubber factories.

Book Reviews

Evaluating Carbon Black for the Rubber Industry in the Huber Laboratory. Compiled and published by J. M. Huber, Inc., New York City. 44 pp.

Presented in four parts—Rubber Laboratory Standard Procedure, Physical Tests, Analytical Tests and Producing Carbon Black—this attractively printed and profusely illustrated book has been published to promote a standardization of tests, their objectives and procedure, rather than as a discussion as to the significance of the results or the striking correlation of the various tests, according to its foreword. Sub-chapters under the four parts of the book cover such subjects as preparation of rubber stock, stress strain test, aging of rubber stock, abrasion, flexometer, tear resistance, rebound, plasticity and dispersion tests, volatile matter, acetone extraction, grit, moisture and ash. In addition, the production of carbon black is told completely with pictures. Since the technical control of carbon black production is guided largely by such tests as outlined in this book, it should prove to be a valuable contribution to every rubber technologist's library.

•

The Performance of Unionism in Heavy Industry. By Allen W. Rucker, in collaboration with N. W. Pickering. Published by Farrel-Birmingham, Inc., Ansonia, Conn.

Published as the 19th in the series of booklet-editorials by the co-authors, and representing a sequel to "Does Unionism Really Benefit American Labor", this edition points out that collective bargaining in important heavy industries failed to increase either employment opportunity or labor purchasing power during the prosperous period ending in 1929. Subsequent events leads the authors to the opinion that "the end results do not confirm the claims made for unionization" and that "there is ample ground for labor as a whole to thoroughly distrust unionism."

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Sharing Profits with Employees. Policyholders Service Bureau, Metropolitan Life Insurance Co., New York City. 28 pp.

Although industrial executives share no common ground as to what constitutes profit sharing, there is a current wave of interest among these executives in employee profit sharing programs according to the latest survey conducted by Metropolitan Life. The different types of profit sharing plans are described in the survey, with their backgrounds, purposes and theories discussed. Several case histories are given. The report states that "it is generally recognized that profit sharing is not a panacea for industrial ills; it is rather a part of an industrial relations program."

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Steam Generating Equipment. Edge Moor Iron Works, Edge Moor, Delaware. 24 pp.

This catalog (No. 102) covers all of the types of water tube boilers manufactured by Edge Moor as well as such accessories as water walls, air preheaters, waste heat boilers, etc. Mention is made of specific installations and method of firing. Typical installations are also described.

MECHANICAL
MOLDED RUBBER GOODS
We Solicit Your Inquiries
THE BARR RUBBER PRODUCTS COMPANY
SANDUSKY, OHIO

Current Trends in Industry. By P. W. Litchfield. Published by the Goodyear Tire and Rubber Co., Akron. 12 pp.

A reprint of an address given by Mr. Litchfield, president of Goodyear, before the New England Conference on November 20, 1936, this booklet presents the rubber executive's viewpoint with regard to current industrial trends including social security, decentralization, labor, etc. He urges that both unemployment insurance and old-age pensions be included in the cost of production, just as much as wages, interest, depreciation and similar items.

•

Uses of Rubber in Stable Management. By Alexander Hay. Published by the Rubber Growers' Association, Inc., 19 Fenchurch St., London, E.C. 3, England. 16 pp.

Fifth in the series of bulletins being published by the R. G. A. on the growing use of rubber products in the agricultural field, this bulletin discusses the advantages of rubber-capped blocks for stable flooring, horse collars fitted with pneumatic tubes, saddles fitted with pneumatic padding, rubber horse shoes and pads, sponge rubber brushing boots and pneumatic tires for various wheel conveyances used in and around stables. The author is Agricultural Liaison Officer for the Association.

•

Tag Oil Testing Instruments for Petroleum Products. (Catalog No. 699D). C. J. Tagliabue Mfg. Co., Park and Nostrand Aves., Brooklyn, N. Y. 24 pp.

Containing listings and descriptions, as well as technical information, on every oil-testing instrument of importance made by the company, including thermometers, hydrometers, colorimeters, viscosimeters, flash and fire test apparatus, distillation apparatus, etc., this catalog is of particular interest to chemists working with petroleum products of any kind. A guide and index to the principal tests on petroleum products are included.

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Wet and Dry. The Foxboro Company, Foxboro, Mass.

This bulletin discusses the instruments and application methods for humidity control in a wide range of industrial drying and processing operations. A review of modern humidity instrumentation includes descriptions of direct-reading relative humidity recorders (air or electrically operated), wet and dry bulb recorders, and auxiliary equipment such as water boxes, valves, charts, etc. Supplementing this review of equipment is a discussion of fundamental humidity control principles.

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Safety. Published by the National Safety Council, Inc., 20 North Wacker Drive, Chicago, Ill. 52 pp.

This booklet contains a number of statements made by executive heads of several leading industrial organizations, all members of the National Safety Council, each statement briefly describing accident prevention steps and their results in the respective factories concerned. In addition, a brief history of each company is given. Statements by P. A. Litchfield, president of Goodyear, and F. B. Davis, Jr., president of U. S. Rubber, appear in the booklet.

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A Handbook of White Pigments. Krebs Pigment and Color Corp., 1007 Market St., Wilmington, Delaware.

Each of the many diversified brands of Krebs white pigments is briefly described in this handbook, many of which, including Ponolith LR, Beckton White J and Beckton White M, are adaptable for use in rubber compounding. Specifications, special properties and principal uses of these pigments are given in a special table for ready reference. The handbook also includes a table of bulking values of Krebs white pigments as well as several conversion tables.

Editorial Comment

Price Control Is Essential

THE current status of the restriction scheme bears great resemblance to that of the ill-fated Stevenson Plan, and seems to be facing the same pitfalls. Unless definite control is instituted by the International Rubber Regulation Committee history may again repeat itself—from all appearances. Last month, in these columns, the prediction was made that crude rubber prices would soon rise above the 19-cent mark. It has already touched 23 cents, and may soon enter into new high ground.

During the first two and one-half years of the Stevenson Plan, prices were kept fairly well in hand between 14 and 38 cents. In May, 1925, the tightening of available stocks, combined with one or two minor factors, resulted in a run-away market, crude rubber prices reaching 60 cents on May 11. The subsequent increase, with its devastating result, is now history.

In like manner, crude rubber prices in the first two and one-half years of present rubber restriction have been maintained between 11 and 20 cents. Today's rising market, too, is attributed in major part to the growing lack of available world's stocks. It is highly problematical whether the recent increasing of permissible exports to 75% of quota allotments during the first quarter of 1937 and 80% for the second quarter will provide sufficient additional available supply to ward off rising prices to a point where they get beyond control of the Regulation Committee—especially if consumption continues to increase.

Liberal release at frequent intervals of crude rubber shipments, higher than permissible exports, has been advanced as one method that the Regulation Committee could adopt to maintain orderly prices. It has already been pointed out that rubber plantations can pay excellent dividends, after providing for all natural expenses, when the price is maintained between 16 and 18 cents. This method, or one likely to produce similar possible results, should be adopted by the Regulation Committee quickly, before crude rubber prices get out of control and history repeats.

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Labor Power vs. Benefits

LABOR controversies raging in the automotive industries have a special significance for business—especially the rubber business—because they represent a struggle for power rather than a series of grievances. This struggle, ably explains Col. Leonard P. Ayres, of the Cleveland Trust Company, has resulted in the discovery that two new controlling principles in the operation of mass production manufacturing must result in important changes in agreements between labor and management, i.e., the stoppage of complete factory manufacturing processes by "sit-down" strikes, and the stoppage of outside supplies by means of industrial unionization. While as yet the rubber industry has not been faced with the latter, it bears the dubious distinction of having "pioneered" the sit-down strike.

The rubber strikes last year, particularly Goodyear's five-week fiasco, and the current automotive labor-management disputes, lead to the belief that some new form of contract must be devised by which workers will covenant to carry through their parts of work agreements to which employers are also bound (so that sit-downs in one department would not result in cessation of work throughout a complete factory division) or that new forms of payment be arranged which will aid in solving the difficulties.

Labor, itself, makes either of these steps problematical, since it seems more concerned with recognition, as in the current automotive show-down, than it does with increased wages and salaries.

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Registration Legislation

RUBBER manufacturers should acquaint themselves immediately with the attempts of legislators in Nevada and Kentucky to pass trade mark registration laws. Every so often these attempts are made, and the danger is consistent that once any single state passes such legislation, other states will follow suit. The Motor and Equipment Manufacturers Association is leading an admirable attack against legislation of this kind, alleging that they serve no practical purpose but represent a new means "by which to grab some more revenue."

The bills, which would make it essential for every manufacturer to register his trade marks with states having a registration law, are particularly dangerous in that they encourage the "deception and defrauding of citizens" since unregistered trade marks would become public property irrespective of the millions of dollars in advertising expenditures put behind the trade marks by their rightful owners. Rubber manufacturers should be as vitally interested in these attempts as apparently are the automotive parts manufacturers.

CURRENT • NEWS of the Rubber Industry

JANUARY, 1937

COMMITTEE RAISES '37 EXPORT QUOTAS

Permissible Export Quotas Raised to 75% for First Quarter and 80% for Second Quarter of the Year to Make Increased Stocks Available

Meeting in London on December 15th, the International Rubber Regulation Committee raised permissible export quotas from signatory countries to 75% for the first quarter of 1937 and 80% for the second quarter. A 65% quota was in effect for the last quarter of 1936 and at a previous meeting the Committee had announced a tentative increase to 70% for the first half of the current year. The growing apparent lack of available stocks, however, led the Committee to increase the quotas to the 75% and 80% figures. In many quarters it was expected that a jump to 80% would be announced because of the stock situation, with publication of the actual figures resulting in a sharp increase in crude rubber prices on the Commodity Exchange.

1937 Quota Statistics

Under the new regulations permissible exports of crude rubber from all signatory countries (including Siam and French Indo-China) total 520,669 tons, an increase of 94,119 tons, or 22.1% over the second half of 1936, and an increase of 124,469 tons, or 31.4% over the first half of that year. In other words, exports during the first quarter of the current year will amount to approximately 13,000 tons more per month than were exported monthly during the last half of 1936, while exports during the second quarter of 1937 will be approximately 15,600 tons more.

An interpretation of the International Rubber Regulation Committee's action was contained in a statement authorized by a special committee representing American rubber manufacturers in the name of the Rubber Manufacturers Association which attended the December 15th meeting in London. This committee was comprised of Col. A. F. Townsend, chairman of the board, Raybestos-Manhattan, Inc., who is also the American delegate to the Regulation Committee; A. L. Viles, president and general manager, Rubber Manufacturers Association; and James J. Newman, vice-president, B. F. Goodrich Company. The statement said in part:

"The increases in percentages are much more important than might appear at first reading. The allowable production for the last half of 1936 has been only 65% and the change to 70% for the first half of 1937 which was authorized at the September meeting had obviously never been in effect. Therefore, the actual change is from 65% of the 1936 basic quota of 1,254,000 tons to an average of 77½% for the first six months of the 1937 quota of 1,298,000 tons, an increase of over 19% on present allowable percentage.

"At this rate of release, it is believed that shipments will approximately equal consumption for the first and second quarters of 1937. If the second quarter rate of 80% is maintained during the balance of the year—and if the estimates of consumption are correct, and they very probably will be—exports for 1937 would be approximately 243,000 tons greater than 1936 and would result in a net increase in the world's stocks."

A Union Sit-Down

Goodrich local officials of the United Rubber Workers of America were given a taste of their own medicine last month when four of the local's office workers "sat-down" at their typewriters in protest against "undue delay" to their request for higher wages and shorter hours. The four girls are members of the Stenographers, Bookkeepers, Typists and Assistants' Union. The "sit-down" was ended after an early conference, with union officials attributing the protest to a "misunderstanding."

Hold Distributor Conferences

A series of distributor conferences has been launched by the General Tire and Rubber Company, Akron, in key cities throughout the country. William O'Neil, president, and L. A. McQueen, sales manager, will be the principal speakers at the various conference sessions, all of which will be held under Mr. McQueen's direction. General's sales and advertising programs will be outlined to each group of distributors.

TRADE WELCOMES AUTO SHUT-DOWN

Lull in Automobile Production Is "Breather" to Tire Manufacturers Who Welcome the Opportunity of Building Up Required Inventories

Predicting that the automobile plant difficulties would be reasonably settled "within a month," rubber executives have indicated that the current shutdown is a welcome breather to the tire industry. The reason for this feeling is based on the fact that rubber factories have been operating 24 hours a day at near capacity in order to meet the demand for original equipment tires, and inventories are fairly low. As one spokesman put it, "Stocks in the field are pretty slim. We must build up stock as soon as possible for the Spring and Summer."

"Stop orders" have already been sent to several tire factories in the Akron area, the Buick and Chevrolet companies being the first two General Motors units to issue these requests. Practically every plant in the Akron area will be affected by stoppage of tire shipments, although it will be felt most severely by U. S. Rubber Products, Inc., which does not operate in the territory. U. S. Rubber produces approximately 75% of General Motors' original equipment tires, with the balance divided among Goodyear, Goodrich, Firestone, General and Seiberling.

Attitude of Akron Labor

Rubber manufacturers were somewhat concerned with the attitude of Akron labor regarding a few inevitable layoffs because of the automotive situation, especially the smaller factories, but these fears were allayed by the statement of John Brophy, one of the directors of the Committee for Industrial Organization, which has organized the automobile strike and which is allied with the United Rubber Workers of America, to the effect that Akron labor "will be sympathetic and cooperative." He also stated that, "I am sure there will be no complaint against curtailment of tire production caused by the difficulties in the automotive field."

For the present year estimates have set original equipment tires at 22,000,000 casings, replacement tires at 31,000,000 and 1,000,000 for export.

1935 CENSUS REVEALS GAINS IN INDUSTRY

Approximately 452 establishments were engaged in rubber manufacturing in the United States during the year of 1935, according to incomplete statistics released by the Census of Manufacturers, or 23.8% more than the 365 reported in 1933. The current figures are based on information received from only 19 states. The figures also revealed that there were 115,579 wage earners employed in 1935, or 19.1% more than the 97,078 in 1933; that wages paid were $135,791,000, or 47.6% greater than the $91,987,332 in 1933; and that the value of products was $692,987,000, or 59.9% greater than the $433,478,537 in 1933.

The 19 states from which the estimates were made include: California, Connecticut, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Montana, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Washington and Wisconsin. It is estimated that these states comprise 90% of the rubber manufacturers in the entire country, employing 91% of the wage earners, paying 92.5% of the wages, and producing 91.5% of the rubber products manufactured in the United States in 1935.

CRITICIZE RUSSIAN SYNTHETIC RUBBER

Although production of synthetic rubber in Russia, according to recent reports, currently accounts for 50% of the rubber consumed in that country, its quality is far from satisfactory, in the opinion of leading foreign technologists. The translation of an article which appeared in a recent issue of *For Industrialization* reveals considerable dissatisfaction with the quality of this rubber. A portion of this translation, made by the Leather and Rubber Division of the Bureau of Foreign and Domestic Commerce, follows herewith:

"A recent conference of heads of the Soviet rubber industry was called to consider the numerous complaints that had been received of the poor quality of automobile tires put out by the various plants. Both casings and tubes have been criticized by consumers and many replacements demanded. As an example, 7 new tires for the ZIS-5 were supplied, and immediately began to go to pieces, even on cars that were not being driven; patches would not stick, so that repairs were rendered difficult. After 1,500 kilometers the rubber began to break, and the various layers of the tire to separate, showing an asphalt-like cement between them. Overloading hastened the process of disintegration; the tires finally had to be thrown away.

"Tires guaranteed for 25,000 kilometers are likely to collapse at any time, and those put on brand new cars at the factory often have to be replaced before the cars are delivered. It has proved useless to present complaints, and the low-quality tires have been used because there were no others. Of the latest shipment of 3,500, only 30% were first quality, although only this grade was promised. The second grade tires, so marked, are subject to blow-out at any time. It is hoped that publication of the facts in this case will force the rubber plants in question to improve their work speedily."

The preliminary goal of the U.S.S.R. for 1936 was 40,000 tons, which was reached prior to the end of the year, according to reports. For 1935 Soviet synthetic rubbers were reputedly produced to the extent of 24,000 tons, which compares with 11,000 tons in the preceding year.

Preparing Jackson Plant

The old Kelsey-Hayes Wheel Corporation factory at Jackson, Michigan, recently purchased by the Goodyear Tire and Rubber Company, is currently being prepared as a tire production unit, although it will be a matter of several months before production is actually started. According to unconfirmed reports, Goodyear will spend approximately $3,500,000 on the remodeling project and will employ about 1,500 workers in the plant to produce more than 5,000 tires daily. Akron rubber machinery shops are said to be busy with machinery orders for the Jackson factory.

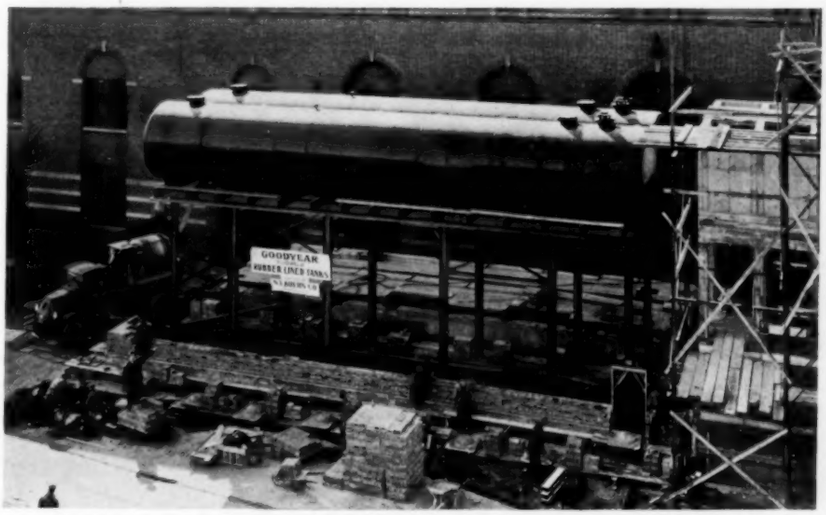
May Protest Rising Prices

An official protest against the soaring price of crude rubber is expected to be made to the British government by the United States in the near future. A group of American business men, including several rubber executives according to report, has petitioned the government to make the official protest alleging that British interests are responsible for excessive prices and charging that because of these interests American, as well as other rubber manufacturers, are forced to pay "uneconomic and unjustifiable prices" for rubber. The group also claimed that rubber can be produced efficiently and profitably at 12 to 18 cents a pound. Crude rubber recently reached 23 cents per pound. The protest is expected to be made either to the British Foreign Office or direct to the International Rubber Regulation Committee.

Barber Changes Name

The Barber Asphalt Company has changed its name to the Barber Company, Inc., in order to give more scope to the company's expanding business. Manufacturers of Genasco Hydrocarbon, Barber maintains offices at 1600 Arch Street, Philadelphia, Penna.

INSTALL 60 FOOT RUBBER-LINED STEEL TANKS



The building being erected will completely enlcose the rubber-lined tanks.

Four rubber-lined steel tanks, 60 feet long and 8 feet in diameter, said to be the largest tank equipment of its kind in the world for the storage of ferric chloride, were recently furnished the Milwaukee Sewerage Commission by the N. L. Kuehn Company, Milwaukee, Wisconsin. All four tanks are interconnected with special acid-proof rubber hose and are fed through rubber-lined pipes. Ferric chloride acts as a coagulative in removing water from the sludge in modern sewage disposal systems. It is delivered in rubber-lined tank cars wich are placed in a heated room for tempering. This room will be directly beneath the two large tanks shown in the illustration above, around which a complete building is being erected. The new building with its special rubber protected equipment will provide adequate storage space at the same time preventing the ferric chloride, which eats away practically every type of lining except rubber, from freezing and eroding all metal parts.

Financial News

LEE RUBBER INCOME SHOWS BIG INCREASE

For the year ended October 31, 1936, the Lee Rubber and Tire Corporation, Conshohocken, Penna., reports net profits of $563,824, equivalent to $2.19 per share, which compares with net income of $184,586 in the previous year, or 72 cents per share. Net sales for the year were $10,599,692, an increase of 25%.

The report shows an operating profit of $1,214,069, before deduction of depreciation and excise taxes, a total of $210,825 being provided for depreciation of plant and equipment, with $89,200 provided for Federal income tax, subject to review by the Treasury Department. Federal excise taxes are shown at $402,417.

The consolidated balance sheet as of October 31st, indicates that Lee has no bank indebtedness and has net current assets of $4,596,718, equal to $17.92 per share on each of the 256,465 shares outstanding. It also reveals that during the year the company paid two dividends of 25 cents each per share, one on February 1st and one on August 1st.

According to a statement by John J. Watson, president, accompanying the report, Lee operated its factories at near capacity during the entire year, 15% more people being employed than in the preceding year. He also revealed that in order to save taxes and for purposes of better corporate structure, the Republic Rubber Company, Youngstown, Ohio, the complete stock of which has been owned by Lee since 1923, has transferred all of its assets to the parent corporation and is in the process of liquidation as an independent company. In the future it will be known as the Republic Rubber Company Division of the Lee Tire and Rubber Corporation. All Republic officers have become officers of the Lee concern.

Thermoid 5% Bonds Offered

A financial group headed by Van Alstyne, Noel and Company, of New York and Philadelphia, offered a total of $2,450,000 of first lien collateral trust 5% bonds (with stock purchase warrants and sinking fund) of the Thermoid Company, Trenton, N. J., on December 30th. The bonds, dated December 15, 1936, are due December 15, 1951, and are priced at 100% and accrued interest. Each $1,000 bond carries three non-detachable stock purchase warrants for 10 shares of common stock, exercisable as a whole only at $8, $12 and $16 per share, respectively, on or before December 15, 1941, or prior to the redemption of the bonds. The stock purchase warrants entitle the holders to purchase an aggregate of 73,500 shares. Net proceeds from the sale of the bonds and common stock will be used partially for the payment in full of Thermoid's five-year 6% gold notes due February 1, 1937, and payment of current bank indebtedness of the Thermoid Rubber Company, a wholly-owned subsidiary, which amounts to $300,000.

Offer Lima Cord Shares

An issue of 60,000 shares of the Lima Cord Sole and Heel Company, Lima, Ohio, was offered publicly last month by A. H. Harrison and Company, Chicago brokerage house. The shares consisted of the company's common stock of $1 par value per share and were offered at $6.75 per share. Inasmuch as all of the stock is being purchased from present stockholders, the offering does not constitute any new financing on the part of the company. Current net sales of the Lima Cord Sole and Heel Company are said to be approximately $100,000 a month, with net profits aggregating about $15,000 per month. Directors of the company recently declared a regular dividend of 12½ cents a share plus an extra dividend of 37½ cents a share, which was payable on December 28th to stockholders of record on December 24th.

Distribute Goodrich Dividend

For the first time since 1930, directors of the B. F. Goodrich Company, Akron, authorized the payment of a $1 a share dividend, with payment aggregating $1,303,255 being made the day before Christmas. The dividend was payable to common stockholders as of December 19th. In its statement announcing authorization of the dividend, the board of directors made it clear that "no regular dividend policy is being established."

Redeeming Mortgage Bonds

The Canadian Consolidated Rubber Company, a subsidiary of the Dominion Rubber Company, has called its outstanding 6% first mortgage bonds, due in 1946, for redemption on April 1, 1937, at 110 and interest. No new financing is involved in the transaction, according to Dominion officials. The United States Rubber Company controls the Dominion concern.

General Tire Dividend

Directors of the General Tire and Rubber Company, Akron, recently authorized payment of the regular quarterly dividend of $1.50 per share on the company's outstanding preferred stock. The dividend was payable on December 30.

SEIBERLING REPORT SHOWS $103,385 NET

For the fiscal year ended October 31, 1936, the Seiberling Rubber Company, Akron, reports a net profit of $103,385, after allowing for Federal income taxes, which compares with a net loss of $639,480 in the previous year and which represents the best showing made by the company since 1931. Gross sales during the period covered in the report amounted to $8,545,128, with net sales showing a gain of 19.9% over the previous year.

According to a statement by F. A. Seiberling, president, arrangements have been made to extend the company's 6% debentures, which total $2,350,000, until November 15, 1937, and in the interim the company anticipates developing a plan that shall take them up in their entirety. He also stated that Seiberling production, sales and profits at the present time are running considerably ahead of a year ago and the outlook for the company "is the brightest that has existed at any time since 1929."

The consolidated balance sheet, as of October 31, 1936, shows total current assets of $2,398,664, of which $201,830 consisted of cash on hand and in banks, with total current liabilities listed at $3,107,567, the 6% debentures of $2,350,000 being included in the liability column. Accounts receivable, less reserves for bad debt, amount to $1,150,094, while all accounts payable, less the debentures, amount to $757,567. Preferred stock dividends in arrears, amounting to $54 per share, were not declared in the report.

Profit for Dayton Rubber

For the year ended October 31, 1936, the Dayton Rubber Manufacturing Company, Dayton, Ohio, reports net income of $510,486, equal after preferred dividends to $2.46 each on 169,690 common shares. This compares with $49,656, or $1.07 each on 46,518 shares of Class A preferred stock in the preceding year. The report shows net sales increased from $4,482,000 to $7,224,177.

Dayton was also scheduled to pay $1.00 on accumulated back dividends on Class A stock on January 14th to stockholders of record on December 29th, 1936. The accumulation, prior to the payment of the $1.00 dividend, amounted to $3.00 per share, the payment leaving $2.00 still in arrears.

Announce Wage Increases

The National Rubber Machinery Company and the Adamson Machine Company, both of Akron, have announced wage increases for their respective workers. National, which employs approximately 400 workers, raised wages 10 per cent, and also presented employees with a cash gift for the Christmas holidays, while Adamson, employing 100, also increased wages, although no definite percentage was announced.

NEW YORK GROUP HOLDS XMAS PARTY

The New York Group, Rubber Division, A.C.S., held its annual Christmas party and meeting on Friday, December 18th, at the Building Trades Club, 2 Park Avenue, New York City. More than 460 members and guests, 463 to be exact, attended the meeting which was featured by an excellent dinner, election of officers, two interesting speakers and distribution of table favors and lucky number prizes. The crowd was the largest ever to attend a meeting of the group, and, in fact, caused an overflow in the main dining room, many members and guests being served in adjoining rooms.

Immediately after dinner the tables were cleared and the members congregated in the main meeting room. Chairman R. D. Gartrell called the meeting to order and introduced the chairman of the Nominating Committee who presented the following slate of officers for 1937: Chairman, J. Miscall (Flintkote); Vice-Chairman, C. A. Bartle (du Pont); Secretary-Treasurer, D. C. McRoberts (*India Rubber World*); Sergeant-at-Arms, David Scott, Jr. (Scott); and for members of the Executive Committee: R. D. Gartrell (U. S. Rubber), E. B. Curtis (Vanderbilt), C. R. Haynes (Binney and Smith), E. W. Schwartz (General Electric), F. S. Malm (Bell Telephone Labs.), J. D. Von Etten (Vansul), A. H. Nellen (Lee Tire), and K. J. Soule (Manhattan Rubber). All nominees were unanimously elected. The Nominating Committee included: Carl J. Wright, chairman, W. L. Sturtevant, A. R. Kemp, John S. Coe and Bruce R. Silver.

Two Speakers on Program

The first speaker of the evening was Walter P. Voth of the Akron Standard Mold Company. Discussing "Modern Methods of Curing Rubber Articles," Mr. Voth punctuated his remarks with motion pictures. He described the two types of platen presses currently on the market, e.g., those which deform the article being vulcanized and those which do not. He urged early unitization of rubber machinery and pointed out the motive power and labor saving advantages of the book-type press. He also made mention of a new 750-ton press currently being constructed for one of the large Akron rubber factories which will eliminate the necessity of tubing rubber sheets prior to molding. The motion pictures indicated the vast difference between modern curing methods and those practiced several years ago.

Following Mr. Voth's address, Chairman Gartrell called upon H. Walter Grote, of the United Carbon Company, to exhibit a few of his feats of legerdemain. Although this bit of entertainment was not scheduled, Mr. Grote's extemporaneous tricks were well received, particularly the one where he caught a live gold fish in mid-air.

The second speaker was Harry I. Day, a motion picture expert of 250 West 57th Street, New York City, who first entertained the crowd with a few well-told tales, and then delivered a talk on "Ultra Slow Motion Pictures in Science and Industry." Mr. Day had with him several pieces of expensive equipment used in the taking of these extremely difficult pictures, which are used to solve many technical and mechanical problems in various industries, and briefly explained how each piece of apparatus was used. He then showed several reels of ultra slow motion pictures, several of which were self-explanatory insofar as their adaptation to problem-solving was concerned.

Special Entertainment Provided

During the course of the evening special entertainment was furnished by Jack Whitehead of the Seamless Rubber Company, who has earned the title of "The Wizard of the Accordion." The entire crowd joined in some community singing on several of Mr. Whitehead's selections.

Table favors, gifts and cash donations were made by the following companies: Akron Standard Mold Co., Anaconda Sales Co., Ansbacher-Siegle Co., Baker Perkins Co., Binney and Smith Co., Godfrey L. Cabot, Inc., Callaway Mills, Carter Bell Mfg. Co., E. I. du Pont de Nemours & Co., (Wilmington, Del.), E. I. du Pont de Nemours & Co. (Fairfield, Conn.), Essex Rubber Co., Flintkote Co., General Atlas Carbon Co., Givaudan-Delawanna, Inc., J. M. Huber, Inc., Ideal Novelty and Toy Co., Imperial Paper and Color Corp., *India Rubber World*, Lea Fabrics, Inc., Monsanto Chemical Co., H. Muehlstein & Co., National Rubber Machinery Co., National Sherardizing and Machinery Co., Naugatuck Chemical Division of U. S. Rubber Products, Inc., and the New Jersey Zinc Sales Co.

Paracord Co., Pequanoc Rubber Co., Rare Metal Products Co., THE RUBBER AGE, St. Joseph Lead Co., A. Schrader's Son, Henry L. Scott Co., Southwark Mfg. Co., Stamford Rubber Supply Co., C. J. Tagliabue Mfg. Co., Titanium Pigment Corp., U. S. Rubber Reclaiming Co., R. T. Vanderbilt Co., Vulcan Proofing Co. and Wishnick-Tumpeer, Inc.

130,300,000 Tire Miles

A distance of 130,300,000 tire miles, an increase of 100% over that of the preceding year, was run by U. S. Rubber Products, Inc., in 1936 in testing tires. Dr. S. M. Cadwell, director of tire development, recently revealed that more than 350,000 tire miles are run under test conditions on cars, trucks and buses every day of the year. In addition to road tests, 50 test wheels are in operation 24 hours a day, 7 days a week, in the U. S. Rubber laboratories, according to Dr. Cadwell.

THREE SPEAKERS AT LOS ANGELES MEETING

Three speakers, presenting widely diversified talks, were featured at the January 5th meeting of the Los Angeles Group, Rubber Division, A.C.S., held in the Chinese Room of the Los Angeles Athletic Club. More than 90 members and guests were present, the largest number that has ever attended one of these meetings.

Dr. Knopf Chief Speaker

The main speaker of the evening was Dr. Carl Knopf, member of the faculty at the University of Southern California and life-long student of archeology, who spoke at some length on the subject "An Interview with a Mummy". Dr. Knopf traced in some detail the development of the alphabet as we have it, explained the methods of deciphering inscriptions on ancient tablets and dwelt at some length on his work with excavation crews on the sites of ancient cities. He traced human characteristics that have persisted through the ages as revealed by translations.

F. H. Banbury of the Farrel-Birmingham Co., Inc., a guest at the meeting, spoke briefly on "New Aspects of Banbury Mixing". He touched briefly on new types of high speed mixers used for special purposes.

An assembled film giving the history of aviation from its inception to the present date was shown in two reels by Zeno Klinker of Los Angeles. Mr. Klinker has spent thirteen years in assembling these two reels, possibly the most complete aviation film in the world. The address by Mr. Klinker was given in a semi-humorous vein but included all requisite historical and technical facts.

Door prizes were donated by E. H. Lewis of the Pequanoc Rubber Company, first prize, a pair of book-ends, going to Robert L. Vignolo (National City Turpentine Co.), and second prize, a bill fold, to Harry Madock (Rubber Art and Mold Co.). A special prize of a traveling case went to W. R. Hucks (Pacific Goodrich), a donation by K. Ellsworth, manager, U. S. Lime Company. Free cigars were distributed by J. M. Huber, Inc., through the H. M. Royal Company.

Group Name Remains Unchanged

A committee appointed at the December meeting to investigate the advisability of changing the name of the group to some name indicative of a larger territory reported unfavorably, the chief of three points presented being the fact that approximately 90 per cent of the membership comes from the Los Angeles area.

W. R. Hucks, past chairman and one of the early promoters of the Los Angeles Group, who is being temporarily transferred from Pacific Goodrich to the Oak, Pennsylvania, plant of the Goodrich organization, where a tire manufacturing division is being

installed, was presented with the book "Rubber—A Story of Glory and Greed", the presentation being made for the Group by B. E. Dougherty. The fly leaves of the book carried the signatures of every one present at the meeting. Mr. Hucks responded briefly, expressing regret for the necessity of leaving Los Angeles, and thanked the members and guests for their courtesies.

The next meeting will be held on Tuesday, February 9th.

TALK FEATURES 1936 CHICAGO XMAS PARTY

The Chicago Group, Rubber Division, A.C.S., held its Fifth Annual Christmas meeting at the Sherman Hotel in Chicago on Friday, December 18th. As usual, dinner was served in the New College Inn of the hotel where a floor show in the Christmas spirit was presented. The members later adjourned to the Crystal Room of the hotel.

The speaker for the evening, Mr. Roy Knipschild, director of research for the Rosenow Company of Chicago, color plate manufacturers, was introduced by Leon J. D. Healy, who acted as chairman for the program, and delivered an interesting address on "Some New Aspects of Color in Modern Merchandising Methods." The speaker was accompanied by Rosenow's art director, Mr. Voightman.

In his talk Mr. Knipschild pointed out the advantages to be derived from advertising in natural color. He described the manufacture of various color plates produced by his company for *Esquire* and displayed several examples of three-color printing. Mr. Voightman then described the "one-shot" camera which makes color plates possible by taking three pictures with one exposure, separating the colors with filters so that the red, yellow and blue plates for printing purposes can be made from instant exposures.

After this presentation lucky number prizes, 74 in all, were distributed through the cooperation of the following companies: Adamson Machine Co., L. Albert and Son, American Zinc Sales Co., Binney and Smith Co., Godfrey L. Cabot, Inc., Carter Bell Mfg. Co., Cleveland Liner and Mfg. Co., E. I. du Pont de Nemours & Co., General Atlas Carbon Co., Herron and Meyer, Midwest Rubber Reclaiming Co., Monsanto Chemical Co., N. J. Zinc Sales Co., H. Muehlstein & Co., Naugatuck Chemical Co., Philadelphia Rubber Works, A. Schulman, Inc., Thiokol Corp., United Carbon Co., R. T. Vanderbilt Co., and Wishnick-Tumpeer, Inc.

Akron Group Meeting

A meeting of the Akron Group, Rubber Division, A.C.S., was scheduled to be held on January 15th at the Akron City Club. H. T. Youngren, of the Oldsmobile Division, General Motors Corporation, was to have delivered a paper on "Some Highlights on Automotive Engineering."

D. C. McROBERTS JOINS KAYSAM CORPORATION

D. C. McRoberts, for the past two years editor of the *India Rubber World*, has resigned that position to join the Kaysam Corporation of America, 1 East 57th Street, New York City, as assistant to the president, effective January 1st. As assistant to Allan A. Ryan, Sr., Mr. McRoberts will contact the rubber and allied industries in which the Kaysam method of casting various products from latex is being rapidly extended.

D. C. McRoberts

Mr. McRoberts has had more than twenty-five years of experience in the rubber industry, twenty-three of which were spent with various units of the U. S. Rubber organization prior to his joining the *India Rubber World*. From Wabash College, where he majored in science, he went directly to the G. & J Tire Company, Indianapolis, to install and operate the first chemical and testing laboratory at that plant in 1913. In 1923 he also became assistant superintendent.

Transferred to Detroit in 1927, Mr. McRoberts and John P. Coe established and operated the Tire Division Development Department, formed shortly after S. P. Thatcher was made second vice-president of U. S. Rubber in charge of all tire manufacturing activities. He later served as superintendent of the Morgan and Wright plant.

In 1929 he was transferred to the Rubber Regenerating division at Naugatuck, Conn., and Mishawaka, Ind., where technical or factory management responsibilities occupied his time until the Fall of 1931 when he became assistant factory manager of the mechanical goods plant at Passaic, N. J. In both the reclaim and mechanical fields Mr. McRoberts operated under the divisional management of Elmer Roberts, vice-president of U. S. Rubber Products, Inc., who is, incidentally, also a director of Kaysam. He remained at the Passaic plant until 1934 when he entered the field of journalism.

His many friends in the rubber and allied industries will be pleased to learn of Mr. McRoberts' new connection with the Kaysam Corporation of America and join us in wishing him every success in his new enterprise.

NEW RUBBER CABLE CLASSIFICATION SET

Effective January 1st, new standards covering the manufacture of cables and flexible cords in England were put into effect by the Cable Makers Association (of England). Where in the past the standard C.M.A. grade of standard cable was insulated with one layer of pure rubber adjacent to the tinned conductor and two layers of vulcanized rubber superimposed thereon, the new standard cable will be insulated by a vulcanized rubber compound applied in three layers. For the Nonazo class of cables, introduced to meet the demand for a lower-priced product, similar rubber compounds will now be used, but not of equal quality.

In the C.M.A. grade, sizes up to and including 1 square inch have been listed for 250 volts in the past. Under the new standards the maximum size in the 250 volt grade will be 19/.064 inch (.060 sq. in.), sizes above this to be manufactured only in 660 volt and higher voltage grades. In the Nonazo class the maximum size for single core cables will be 19/.064 inch, and in the case of twin and three-core flat lead-covered and flat tough rubber-sheathed cables the maximum size will be 7/1064 inch (.0225 sq. in.). The Association has also announced that the Vicma and Vinazo trade names will be discontinued, only the C.M.A. and Nonazo brands remaining.

Question Goodyear Officials

Paul W. Litchfield and Clifton C. Slusser, president and vice-president, respectively, of the Goodyear Tire and Rubber Company, were scheduled to appear before the LaFollette Committee in Washington, D. C., on January 10th, in connection with labor-management disputes. The Congressional committee is investigating alleged infringements of civil liberties. The two Goodyear officials were expected to be specifically questioned about company activities during the strike by the United Rubber Workers of America last Winter and Spring and about similar activities at Gadsden, Alabama, where union organizers and officials were twice beaten by mobs. The committee has also subpoenaed Goodyear office and plant records.

Avon Adds to Factory

The Avon Sole Company, Avon, Massachusetts, manufacturer of rubber soles, heels and other rubber products, is building a two-story addition to its factory. The addition is said to be necessary to provide manufacturing space for increased production.

"NEOPRENE" REPLACES "DUPRENE" TRADE-MARK

Effective immediately, the Rubber Chemicals Division of E. I. du Pont de Nemours and Co., Inc., Wilmington, Delaware, has adopted the generic name "neoprene" for its chloroprene polymers previously sold under the DuPrene trade mark. The new term—neoprene—will not be trade-marked and may be freely used by rubber manufacturers to describe products which display the particular characteristics of the chloroprene polymers. It is the purpose of the company to have the word accepted and used in the same manner and usage as the word rubber.

For some time DuPont has been contemplating the advisability of replacing its DuPrene trade-mark with a term that could be applied to both the unvulcanized material and to the wide variety of products made from it. DuPrene could not be applied to products made from chloroprene polymeric materials, even if the company was willing to relinquish its trade-mark rights, because it is derived from the name DuPont. The suggestion that its customers designate finished products made from DuPrene as chloroprene rubber was rejected because the trade felt it would be confused with chlorinated rubber. The word neoprene can be defined to mean either polymerized chloroprene or products made from it which display its distinctive characteristics.

In a letter to rubber manufacturers and other users of DuPont's chloroprene polymers, the company advises that it has no intention of protecting the name neoprene as a trade-mark, at the same time announcing that its advertising campaign is being expanded to ultimate consumers and will stress the name neoprene with an explanatory note that it is the same product formerly sold under the name of DuPrene.

No change whatsoever has been made in the product itself, according to DuPont, outside of the name description. The company also reports that since the completion of the second manufacturing unit in August, 1935, the sale of neoprene has increased six-fold with resulting price decreases. The grade of chloroprene polymer previously sold under the trade mark DuPrene and designated as Type E will hereafter be known as Neoprene Type E.

Move United Warehouse

Due to increased local business, the United Carbon Company has moved its Chicago warehouse to 3037 South Turner Avenue, which is located on the Illinois Northern Railroad. The new warehouse is conveniently situated either for local deliveries or for long distance trucking as it is located on the Southwest side, close to the major truck terminals operating out of Chicago in all directions. The new telephone numbers are Lawndale 3331 and 3332. C. M. Baldwin is the Chicago District Manager for United Carbon.

Coming Events

January 15. Akron Group, Rubber Division, A.C.S. Akron City Club, Akron.

February 9. Los Angeles Group, Rubber Division, A.C.S. Los Angeles Athletic Club, Los Angeles.

April 12-15. Rubber Division A.C.S. Chapel Hill, North Carolina.

September 13-17. Rubber Division, A.C.S. Rochester, N. Y.

October 11-15. National Safety Council. (26th Safety Congress). Kansas City, Mo.

Producing Monastral Blue

The new blue pigment recently introduced in England by the Imperial Chemical Industries under the name of Monastral Fast Blue BS, is now being produced in the United States under the same name by the Dyestuffs Division of E. I. du Pont de Nemours and Company, Inc., Wilmington, Delaware, by special arrangement between the two companies. The new pigment is said to be approximately fourteen times as strong as Ultramarine, to be completely insoluble in rubber, unaffected by acids and alkalis, and to produce especially good shades in sponge rubber because it is unaffected by ordinary blowing agents.

Michelin May Resume

Rumors are rife in the tire trade that the Michelin Tire Company, of France, may soon resume its manufacturing activities in this country, although quite recently a group, headed by Edward Hutchens of Cudahy, Wisconsin, purchased the machinery and equipment formerly used by the American branch of Michelin at Milltown, N. J. Michelin suspended manufacturing operations at Milltown several years ago with the statement that its action was due to "poor merchandising practices of tire manufacturers" prior to and during the early depression period.

To Publish Dictionary

A technical rubber dictionary, containing more than 2500 technical terms and definitions, and printed in four languages—French, English, German and Russian—will be published early this year by the *Revue Générale du Caoutchouc*, the French rubber journal, which maintains offices at 19 Boulevard Malesherbes, Paris, France. The dictionary, which is being compiled by Dr. Leon Akobjanoff, noted rubber technologist, will sell for 45 francs per copy, approximately $2.00 at the current rate of exchange.

CONSUMPTION SHOWS 1.6% GAIN IN NOVEMBER

Consumption of crude rubber by manufacturers in the United States for the month of November is estimated to be 50,303 long tons, which compares with 49,509 long tons for October. November consumption shows an increase of 1.6% over October and 18.9% above November a year ago, according to statistics released by the Rubber Manufacturers Association. Consumption for November, 1935, was 42,310 (revised) long tons.

Imports of crude rubber for November are reported to be 44,296 long tons, an increase of 8.3% over the October figure of 40,920 long tons, and 53.7% over the 28,826 long tons imported in November, 1935.

Total domestic stocks of crude rubber on hand November 30 are estimated at 212,515 long tons, which compares with October 31 stocks of 219,553 long tons and 308,993 (revised) long tons on hand November 30, 1935.

Crude rubber afloat to U. S. ports as of November 30 is estimated to be 73,691 long tons which compares with 67,825 long tons afloat on October 31 and 46,588 long tons afloat on November 30 a year ago.

November reclaimed rubber consumption is estimated at 12,029 long tons; production, 14,357 long tons; and stocks on hand, November 30, 28,135 long tons.

6.4% GAIN RECORDED IN TIRE SHIPMENTS

Shipments of pneumatic casings during the month of October are estimated at 4,081,023 units, an increase of 6.4% over September and less than 1% above shipments made in October, 1935, according to statistics released by the Rubber Manufacturers Association.

Production of pneumatic casings for October is estimated at 5,123,467 casings, an increase of 2.9% over September and 26.5% above October, 1935.

Pneumatic casings in the hands of manufacturers, October 31, 1936, are estimated at 10,088,510 units, an increase of 12% over the stocks on hand September 30, and 21.7% above stocks on hand October 31, 1935.

The actual figures are as follows:

PNEUMATIC CASINGS

	Shipments	*Production*	*Inventory*
Oct., 1936	4,081,023	5,123,467	10,988,510
Sept., 1936	3,835,998	4,981,131	9,005,065
Oct., 1935	4,054,747	4,050,509	8,290,594
Oct., 1934	3,009,714	3,286,902	8,656,799

New Manhattan Warehouse

A new West Coast branch office and warehouse has been opened by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., at 778 Brannan Street, San Francisco. A. R. Bradshaw has been placed in charge of the combination office-warehouse.

NEW ENGLAND NEWS

United States Rubber Products, Inc., operating plants in Naugatuck, Conn., and elsewhere, has contributed $216,000 to the company's pension and service fund as of December 31, 1936. It will be available April 1. Total distribution will be about $271,000.

Direct cash expenditures for the benefit of employees during 1936, aside from wages and salaries, total well over $1,200,000, including the following items: For pensions and disability allowances under the company's pension plan, $565,000; for unemployment insurance under Federal and State laws, $380,000; first contribution to the service fund, $55,000; second contribution to the service fund, $216,000.

Expenditures during 1937 will include the usual pension payments, a contribution for unemployment insurance and an additional payment of approximately $380,000 for Federal old age pensions. Also, all factory employees will receive one week's vacation with pay, a value in money of more than $500,000.

On September 30, a total of $2,273,908.35 stood to the credit of employees in the retirement and savings plan, the retirement fund amounting to $1,891,112.14, with a total of $750,150.26 in the savings account, earned income of $50,281.17 and a reserve for contingencies fund of $36,789.98.

Preceding a shutdown of several weeks for overhauling, President Edward F. Schaeffer of the American Character Doll Company and the Paragon Rubber Company, Easthampton, Mass., played host to employees of both divisions and a number of invited guests at a Christmas party on December 23. Arrangements were in charge of Morton Jaffe, general manager and personnel director. Mr. Schaeffer and other officials were presented gifts by the employees. Nearly 500 attended. The company specializes in the manufacture of rubber dolls.

James Caruso, suspender web manufacturer of Middletown, Conn., who has been occupying space in the Russell Mfg. Company plant, where he was formerly an employee, has purchased the idle plant of C. L. Wetherbee Son on Evergreen avenue, South Farms, Middletown, to which he is moving his business. The Wetherbee mill produced bias tape, but was closed about a year ago. The building contains about 6,000 square feet of floor space.

Seamless Rubber Company, New Haven, Conn., is building a new steel garage at its factory on Hallock Avenue, at a cost of several thousand dollars.

Sponge Rubber Products Company, employing 400 persons in its Derby and Shelton, Conn., plants, gave a Christmas bonus of a week's pay to employees who had been with the company 10 months or more. Those with a shorter period of service received an extra day's pay for every two months' service, it was announced by William R. Todd, secretary and treasurer.

The Elm City Rubber Company plant at 73 Wallace street, New Haven, Conn., erroneously reported last month as destroyed by fire on November 27, actually suffered only water damage to stock and was able to resume full operation within a week. Confused reports at the scene of the blaze caused the error. The stock loss was fully covered by insurance, according to officials of the company, which manufactures baby pants, infants' rubber specialties and bathing caps.

The Panther-Panco Rubber Company, Inc., Chelsea, Mass., has revealed that production is well under way on its new non-skid composition sole. The sole and its accompanying heel are designed for use on shoes which must give unusually good service, such as those used by policemen and mail carriers.

The soles are made with a corded construction, the cords being buried in pure gum rubber. The cords, instead of being short individual pieces, running in a straight line from the sole bottom to the top of the sole, are curved at the top. A U-bend in the cords near the top of the sole prevents the cords from soaking up and transmitting moisture to the innersole because there are no free ends at the top of the sole, the company claims.

The company is offering the new sole in both black and brown. Both styles are said to be waterproof and extremely durable, and the black is described as "non-marking."

Armstrong Rubber Company, West Haven, Conn., tire manufacturer, has awarded contracts for construction of a three-story factory addition, 180 x 80 feet, of reinforced concrete and brick. The addition was necessitated by increasing production demands.

Jenkins Bros., Bridgeport, Conn., manufacturer of a wide variety of mechanical rubber goods and other rubber merchandise, paid a substantial Christmas bonus to 800 employees in the factory and office, swelling the list of New England rubber plants which thus remembered their workers. The Jenkins bonus was based on a percentage of 12 months' earnings and amounted to the equivalent of two or more weeks' pay in many instances.

Sales volume of the Fisk Rubber Corp., Chicopee Falls, Mass., is expanding steadily and a strong dealer organization is being built, according to a year-end statement issued by the management which cites recent wage increases and steady growth in number of employees as evidences of improving business. Net profits of the corporation for the last six months of 1936 will be close to $450,000, the Boston News Bureau estimates. The bureau says that the company has been gradually stepping up employment and at present has around 2,500 workers on the payroll as compared with about 2,000 early in January of 1936.

Mild winter weather, with absence of snow and ice in wide areas of the country, has caused a noticeable drop in the demand for overshoes and galoshes, reflected in an announcement by the Goodyear Rubber Company, Middletown, Conn., of impending layoffs. Arthur V. McDowell, vice-president of the concern, said that production in all departments was being reduced as a result of the slackening in demand.

Witco Plant Near Completion

Construction of the new carbon black plant being erected at North Plains, Texas, by the Witco Carbon Company, is proceeding rapidly, with first production expected early next month. The plant, which is located about a mile north of the McKee plant of the Shamrock Oil and Gas Company, will have a capacity of 70,000,000 cubic feet per day when completed. A siding to the new plant has already been completed by the Rock Island Railroad, while a village of modern homes for the workmen has also been built. The recently-formed Witco concern has its main offices at 295 Madison Avenue, New York City.

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SOLE PRODUCERS OF PURE ASBESTINE SPECIALLY PREPARED FOR USE IN RUBBER

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LIBERAL WORKING SAMPLE FURNISHED FREE

Names in the News

W. B. WIEGAND, director of research, Columbian Carbon Company, New York City, was recently elected as an individual member of the American Society for Testing Materials. G. P. MOOSHEGRANZ, chemist, Jenkins Brothers, Bridgeport, Conn., was also elected as an individual member.

CLIFTON C. SLUSSER, vice-president and general manager, Goodyear Tire and Rubber Company, Akron, addressed members and guests of the East Akron Board of Trade at the Board's annual meeting held at the Goodyear Cafeteria on December 17th. He discussed "Goodyear's Future in Akron."

ROBERT I. WISHNICK, president and treasurer, Wishnick-Tumpeer, Inc., was recently elected a member of the Board of Trustees of the Armour Institute of Technology, Chicago, as a representative of the Alumni Association. He was graduated from the Institute in 1918 with the degree of B.S. in Chemical Engineering.

J. E. COTTER, formerly chief chemist of the Tyre Rubber Company, Andover, Mass., has been appointed to a similar post with the Virginia Rubatex Corporation, successor to Rubatex Products, Inc., which operates a factory in Bedford, Virginia.

E. H. NAHM, of the Naugatuck Chemical Division, U. S. Rubber Products, Inc., was married to MISS OLA MAY BISHOP, of Woodsfield, Ohio, on Saturday, January 2nd, at the home of the bride's parents, with REV. J. V. A. TRAYLOR officiating. The couple left immediately afterward for a motor trip east.

GEORGE W. SAWIN, formerly Philadelphia District Manager, B. F. Goodrich Company, has been named vice-president and general manager of the B. F. Goodrich Company of Canada, Ltd., Kitchener, Ontario, filling the vacancy left by the recent death of FRANK G. MORLEY. The new executive has a record of 24 years of service with Goodrich.

CHARLES A. MEARS, associate director of education, B. F. Goodrich Company, Akron, delivered a talk on "Something for Nothing" at a banquet of the Young People's Club held at the Wooster Avenue Reformed Church, in Akron, on December 11th.

LEONARD C. CARTWRIGHT has joined the staff of Foster D. Snell, Inc., Brooklyn, N. Y. He has had an extensive experience in various industries as a research, development and consulting chemist and engineer.

S. L. BROUS, a member of the chemical staff of the B. F. Goodrich Company, Akron, addressed members of the Cincinnati Section, American Chemical Society, on the subject of "Synthetic Rubber" last month.

L. A. LAURSEN, widely-known rubber machinery inventor, was reappointed to serve another three years on the Akron Metropolitan Park Board on December 24th.

W. E. EMLEY, National Bureau of Standards, Washington, D. C., is scheduled to deliver a paper on "Accelerated Aging Tests for Paper, Rubber and Weighted Silk" at the Second Congress of the International Association for Testing Materials to be held from April 19 to 24, 1937, in London.

GEORGE J. STRITCH, associated with the B. F. Goodrich Company for the past sixteen years, has been named manager of the manufacturers' sales division office in Detroit to succeed the late JAMES T. KENNEDY. This division is concerned with original equipment sales.

E. HAZELL has been transferred from the General Laboratories of U. S. Rubber Products, Inc., Passaic, N. J., to the Providence (R.I.) factory of the company where he assumes the post of manager of the development department. N. GIBSON MADGE, formerly at the Providence factory, has been shifted to the General Laboratories at Passaic.

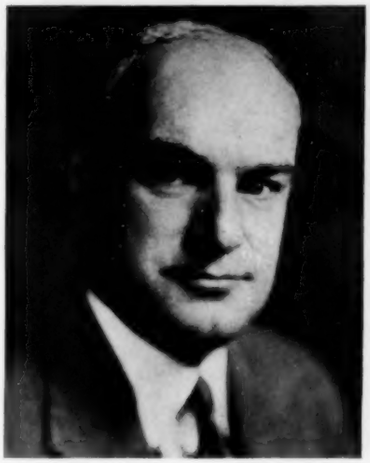
E. J. SMAIL, JR., general sales manager, Rubber Service Laboratories Division, Monsanto Chemical Company, Akron, has an interesting general article under the title of "Rubber" in the December, 1936, issue of *Monsanto Current Events*, company house organ.

HARVEY FIRESTONE, SR., chairman of the board, Firestone Tire and Rubber Company, Akron, celebrated his 68th birthday on December 20th at his Winter home in Miami Beach, Florida. He expressed the opinion that 1937 would be a "boom" year for rubber.

E. M. ALLEN, formerly connected with the research and development laboratory of the Columbia Chemical Company, Barberton, Ohio, has joined the chemical staff of Wishnick-Tumpeer, Inc. He is credited with the development of Calcene.

BOYD R. PARMELEE recently resigned his position with the St. Clair Rubber Company, Marysville, Michigan, and has moved his residence to Detroit where he is located at 2858 Fort Park Boulevard, Lincoln Park Station. He has not yet announced his future plans.

Hoadley Joins Atwood



FRANKLIN R. HOADLEY, erstwhile vice-president of the Farrel-Birmingham Company, Inc., Ansonia, Conn., was presented with a silver plaque by the employees of the foundry and pattern departments, and tendered a testimonial dinner by the executive and office force of that company last month prior to his joining the Atwood Machine Company, Stonington, Conn., on January 1st, in the capacity of president.

Gregory Joins Farquhar

D. J. Gregory, noted designer of high speed hydraulic presses, has joined A. B. Farquhar Company, Ltd., York, Penna., as chief engineer of the company's hydraulic press division. Mr. Gregory has worked with such European firms as the Krupp Works in Germany and the Putilov Works in Russia, while in the United States his experience includes development work with Bethlehem Steel, Southwark Foundry and Machine, Birdsboro, Farrel-Birmingham and Baldwin-Southwark. He has developed hydraulic presses for the rubber, plastic, paper, electrical and other industries. The Farquhar company is expanding its hydraulic press division.

Kerm Heads Stanley Company

William J. Kerm, formerly secretary and treasurer of the Stanley Chemical Company, East Berlin, Conn., has been named president of that company succeeding the late William S. Rowland. He also continues as treasurer. E. M. Hayden, in charge of technical development, research and new products manufacture, has been named vice-president and secretary, and Edward H. Christ, sales manager, has been appointed vice-president. All three executives have also been elected directors.

HERMAN OSBORNE, president, Stalwart Rubber Company, Bedford, Ohio, led a discussion on "Industrial Price Wars and Their Results" at a session of the Bedford Rotary Club held on December 8. The discussion was one of a series on business problems conducted by the club.

Obituaries

Walter Logan Pipes

Walter Logan Pipes, lawyer and head of the Patent Department of the U. S. Rubber Company, died on December 14 on the links of the Suburban Golf Club, Union, N. J. He complained of feeling ill while playing near the 3rd hole, but was dead before an automobile summoned from the clubhouse reached him. He was 50 years of age. Born in Washington, D.C., Mr. Pipes received the degree of M.E. from the University of West Virginia in 1911 and four years later received an LL. B. from Georgetown University. During these four years he worked in the United States Patent Office and in 1916 completed a special course in patent law at Georgetown. A few months after receiving his LL. B. he joined the Singer Sewing Machine Company, Elizabethport, N. J., but resigned three years later to enter the Patent Department of U. S. Rubber with which he was connected for 17 years at the time of his death. In 1933, on the death of Ernest Hopkinson, Mr. Pipes was advanced to the head of the department. He leaves a widow, daughter, two brothers and a sister.

C. L. Loveland

Charles L. Loveland, a pioneer in the advertising field, and for six years advertising manager of the Mason Tire and Rubber Company, died at the home of his son in Kent, Ohio, on December 19th, at the age of 78. Receiving his education in the public schools of Hartford, Conn., Mr. Loveland went to Chicago shortly thereafter where he first worked as a court reporter and later became secretary to the publisher of the Chicago Herald. He also acted as circulation manager for the paper for 19 years. Shortly after the turn of the century he established his own advertising agency, but was persuaded to join the Waterloo Cement Machinery Company in 1911 on a full time basis, where he remained until 1918. Early in that year he joined Mason Tire and Rubber as advertising manager and remained with that firm until his retirement from active business in 1924. He had been in retirement for the past 12 years. Funeral services were held at the funeral home of S. C. Bissler and Sons, in Kent, with interment at Rochester, N. Y. He is survived by his widow and four children.

Leonard Kennedy

Leonard Kennedy, banker, manufacturer and engineer, who directed the affairs of the Goodyear Tire and Rubber Company for two years after its reorganization in 1921 as industrial manager, died at Union Hospital, Port Chester, N. Y., on December 29th. He was 55 years of age. For the past 10 years Mr. Kennedy was a business partner of William F. Carey, former president of Madison Square Garden Corporation, and now Commissioner of Sanitation of New York City.

Andrew M. Wightman

Andrew M. Wightman, associated with the rubber industry for more than 35 years, died recently at his home in Oak Park, Illinois, after a short illness. He was 54 years of age. Born in Chicago, Mr. Wightman first entered the rubber industry with the Morgan and Wright Company. Later, he joined the LaCrosse Rubber Mills serving as superintendent of the mechanical goods division. Subsequently, he acted as factory superintendent for the Vail Rubber Company, Chicago, and also for the Williams-Bowman Rubber Company, Cicero, Illinois. For a time he did experimental work on rubber and other materials at the Staunton Laboratories. Prior to his death, he was superintendent of the rubber division of the Rapid Roller Company, Chicago, a post he had occupied for the past seven years. A member of the A. C. S., Mr. Wightman is survived by his widow and a son.

G. A. Venghaus

G. August Venghaus, assistant export manager, General Tire and Rubber Company, died at his home, 974 Amelia Avenue, Akron, on December 6, at the age of 37, from a heart attack suffered a few days previous. A mere boy when the World War broke out, Mr. Venghaus nevertheless served in the capacity of an officer in the German army and associates attribute his heart ailment to his wartime services. Arriving in the United States in 1926, he immediately joined General's export office in New York City as a clerk, and was transferred to Akron late in 1929, holding various positions in the export department until his appointment as assistant export manager. Funeral services were held on December 8th at Sweeny's Memorial Chapel in Akron with interment at Kingston, N. Y. He leaves a widow in this country and his parents and two brothers in Germany.

W. Carl Raw

W. Carl Raw, formerly assistant traffic manager of the Miller Rubber Company for sixteen years, died on December 20, at the age of 52, the victim of a heart attack, while visiting friends in Fairlawn Heights. Funeral services were held at the Billow Chapel in Akron, with Rev. George Cross Baner officiating, with interment in Mt. Peace Cemetery. Mr. Raw leaves a widow, daughter, mother, brother and three sisters.

Akron Briefs

Following its announcement last month that Popeye had become a comic sketch feature on rubber balls, The Seiberling Latex Products Company announces for the new year several additions in colors to their bathing cap line, together with a new "water-lock" feature that will keep bathers' hair dry. The new water-proof cap has a band inside that prevents water from getting under the cap and reaching the hair. In addition to several new and attractive colors, the Seiberling caps will have latex ribbons instead of the usual chin straps.

Production at the new Cascade Rubber Company, which began a few weeks ago, is increasing and conditions for constantly increasing volume during the new year are good, according to W. G. Lerch, president of the company. Present production is confined to repair materials for tires, Mr. Lerch said. Formerly superintendent of production for the Master Tire and Rubber Corporation, Mr. Lerch resigned to organize Cascade. The factory is located in Cuyahoga Falls.

Official announcement from the office of L. Albert and Son is to the effect that the plant recently purchased from the India Tire & Rubber Company at Mogadore will go into production in a short time with a substantial company behind the movement. Who will head the company or will furnish the financial backing was not disclosed, but will be announced sometime after the first of the year, it was stated.

In harmony with the profitable showing of the Seiberling Rubber Company, in its report for the past year, the *Seiberling News*, official house organ to dealers, extends greetings to 58 new dealers who took on the Seiberling line during the thirty days ending December 1st. The greeting was under the signature of F. A. Seiberling, president.

In the December issue of the house organ, a telegram is reproduced which was dispatched from F. A. Seiberling to D. R. Wilson of The Willys-Overland Company. Mr. Seiberling extended congratulations to Mr. Wilson on the sensational reception the new Willys cars received at the New York Auto Show. Seiberling furnishes a large percentage of original tire equipment for the new Willys models.

Trenton News

The Rubber Manufacturers' Association of New Jersey held its annual meeting and dinner on December 8th at the Trenton Club. The following officers were all re-elected: John A. Lambert, Acme Rubber Mfg. Co., president; Lloyd Leaver, Hamilton Rubber Mfg. Co., vice-president; Charles E. Stokes, Jr., Home Rubber Co., secretary; and Horace B. Tobin, Woven Steel and Rubber Co., treasurer.

Practically every rubber manufacturing plant in the Trenton area is operating twenty-four hours a day with three shifts, with reports current that this situation will continue for some time to come.

Suit for $50,000 damages has been instituted in the Circuit Court, Trenton, by Andrew Ducko against the Thermoid Rubber Company, the plaintiff alleging that he suffered pulmonary injuries by inhaling asbestos dust while in the employ of the brake lining department of the company.

To fill current orders for rubber baseball plates and other athletic material for Southern concerns, the Hohweiler Rubber Company, Morrisville, Penna., is operating with two shifts.

Israel Citron, president, Murray Rubber Realty Holding Company, has acquired title to the factory formerly operated by the Murray Rubber concern, the assets of which were disposed of at public action recently. According to Mr. Citron he will improve one of the larger buildings in the group involved in the transaction, renovating it for occupancy by industrial concerns. Title was secured from a group of New Yorkers at a sale held in Federal Court. Delinquent taxes, amounting to $45,780, will be paid to the City of Trenton by the new owner.

Schiabo Corporation of Jersey City, has been incorporated at Trenton, with $180,000 capitalization, to deal in scrap rubber and metals. Incorporators included: Louis Schiavone, Michael V. Bonome and Richard V. Bonome, all of Glen Ridge, N. J.

Joseph Stokes Rubber Company, Trenton, is building an addition to its factory, with other additions planned for the early future.

The Ruberoid Company, South Bound Brook, N. J., gave to each employee not eligible to a vacation a cash present during the holiday season. The company recently announced that in the coming year all eligible employees will be given an extra week's pay or a week's vacation with salary.

Kaysam Officers

Officers of the Kaysam Corporation of America, 1 East 57th Street, New York City, which maintains a laboratory at the Rubber-Gel Products Corporation plant in North Quincy, Mass., include Allan A. Ryan, Sr., president; Fortune Peter Ryan, treasurer; and Adolphus F. Long, secretary. The directorate is composed of the following: David A. Cutler, president, Alfred Hale Rubber Co.; Bradley Dewey, president, Dewey & Almy Chemical Co.; T. F. D. Haines, of Appleton, Rice and Perrin; John H. Hunter, Sr., of John H. Hunter and Son; B. H. Jackson, of Metal Traders, Inc.; Elmer Roberts, vice-president, U. S. Rubber Products, Inc.; Allan A. Ryan, Sr., and Theodore S. Ryan.

German Publisher Moves

The Union Deutsche Verlagsgesellschaft, publisher of *Gummi-Zeitung* and *Kautschuk*, weekly and monthly German rubber journals, respectively, has moved its offices to Unionhaus, Alexandrinenstrause 108, Berlin, SW 68, Germany. In addition to the two rubber journals, the company also publishes several rubber technical books.

Raise Mechanical Goods Prices

A general increase in prices of mechanical rubber goods will probably take effect in the next few weeks following an upward revision announced by the B. F. Goodrich Company, Akron. Effective January 1st, Goodrich increased hose and belting prices by 5% with a 10% boost on miscellaneous items, including packings and molded and extruded goods. Increased costs of raw materials necessitated the price advances, according to J. H. Connors, Goodrich vice-president.

Wilson Appointed Secretary

B. Brittain Wilson, business manager of the *India Rubber World*, has been appointed secretary-treasurer of the New York Group, Rubber Division, A.C.S., succeeding D. C. McRoberts, elected to the post at the December 18th meeting of the Group, but who has since resigned from the publishing organization to become assistant to the president of the Kaysam Corporation of America. The appointment was announced by Chairman Dr. J. Miscall, following a mail vote of the Executive Committee of the New York Rubber Group.

Stillwagon Joins "World"

S. C. Stillwagon, with the Naugatuck Chemical Division of U. S. Rubber Products, Inc., for a number of years, recently resigned from that company to join the editorial staff of the *India Rubber World*. After being graduated from Hiram College and majoring in chemistry at the Case School of Applied Science, Mr. Stillwagon joined the general laboratories of U. S. Rubber as a research chemist. For the past twenty years he has been connected with various technical and manufacturing divisions of the rubber industry, serving at one time as chief chemist of the Mechanical Rubber Company, Chicago.

LOS ANGELES NEWS

One of the largest gatherings of rubber appliance customers ever to get together in one group on the Pacific coast met by invitation at the down-town display and store building of Rubbercraft Corporation of California, Ltd., for the annual Christmas party.

Charles N. Merralls, president of the corporation, was host to the group and states that nearly 1,000 of the 1,200 invited attended. The loft of the two story building was beautifully decorated for the occasion with evergreen boughs, toy balloons and colored lights. A buffet lunch was served, with more than 300 pounds of turkey needed to supply the guests.

"This annual event," says Mr. Merrals, "was bigger this year than ever before in its history. There were no women present and a program of singing and music followed the supper. We never allow business to be mentioned at our annual customer-guest parties. I assume the fact that sales for 1936 were 33-1/3 per cent above those of 1935 is part explanation of the enthusiasm felt at the party this year. The response was marvelous."

Another annual event celebrated at the Rubbercraft factory was the annual party for employees where presents were distributed and an evening of entertainment and fun enjoyed. Both men and women attend this party.

The Darnell Corporation, Ltd., Long Beach, California, manufacturers of wheels, casters and glides, reports the installation of nine new vulcanizing presses and the addition of a new 60-inch rubber mill in their plant. V. M. Burrows, in charge of production at the plant, reports that the new equipment is necessary to take care of the increased demands for the products. The organization solicits no outside outlets for its rubber products but all are used in the equipment turned out by the company.

MARKETS

RUBBER—COTTON AND FABRICS—CHEMICALS

NEW YORK, JANUARY 11, 1937

Crude Rubber

CRUDE rubber prices have advanced three cents since our last report. The market in the past month has been marked by wide daily fluctuations with speculative interests in evidence on all price bulges. High for spot on the Exchange was 22.97, quoted on December 28th; low was 18.97 on December 12th. This is the first time in eight years that prices have approached the 23-cent mark on the Exchange, although a price slightly above 23 cents was quoted during the skyrocketing period in the outside market. The price moved into new high ground immediately following the announcement by the International Rubber Regulation Committee that quota exports were being increased to 75% for the first quarter of 1937, and 80% for the second quarter. This move was interpreted as bullish in the market. Despite the increases the trade feels that the world stock situation will not be improved for many months to come. Unsettled labor conditions in the automotive industry has served as a brake to dampen bullish sentiment with the result that prices receded slightly early this month, but in the past few days has again indicated an upward trend. Quotations in the outside market, Exchange, London and Singapore, follow:

As of January 11

Plantations—

Ribbed Smoked Sheets—			
No. 1 Spot	—	@	.22⅜
April-June	—	@	.22⅞
July-September	—	@	.22⅞
No. 2	—	@	.22⅞
No. 3	—	@	.22⅝
No. 4	—	@	.22½
Thin Latex Crepe	—	@	.23½
Thick Latex Crepe	—	@	.23½
Brown Crepe, No. 1	—	@	.22⅝
Brown Crepe, No. 2	—	@	.22¼
Amber Crepe, No. 2	—	@	.22⅝
Amber Crepe, No. 3	—	@	.22¼
Amber Crepe, No. 4	—	@	.22⅛
Brown Crepe, Rolled	—	@	.21⅞

Latex—

Liquid Latex, per gal.	.80	@	.81

Paras—

Up-River, fine	—	@	.25
Acre Bolivian, fine	—	@	.25

Balata—

Block, Ciudad	—	@	.30

LONDON MARKET

Standard Smoked Sheets—Buyers—January 11			
April-June	—	@	10 11/16d
July-September	—	@	10 5/16d

SINGAPORE MARKET

Standard Smoked Sheets—Sellers—January 11			
April-June	—	@	10 11/16d
July-September	—	@	10 11/16d

Reclaimed Rubber

Based on increased cost of scrap reclaim prices have gone up on practically all grades, particularly on tube stocks. Activity continues unabated with indications that it will continue through the Winter and early Spring unless the automotive labor-management difficulties are stretched out over a long period. Rising crude rubber prices naturally aid reclaim sales. Current quotations follow:

High Tensile

Super-reclaim, black lb.	.11¼	@	.11½
High Tensile Red lb.	.08¼	@	.08¾

Shoe

Unwashed lb.	.06½	@	.06¾
Washed lb.	.08	@	.09

Tube

No. 1 (Floating) lb.	.16	@	.16¼
No. 2 (Compounded) lb.	.08¼	@	.08½
Red tube lb.	.08¼	@	.08¾

Tires

Black lb.	.05	@	.05¼
Black, selected tires lb.	.05⅜	@	.05⅝
Dark Gray lb.	.07	@	.07½
White lb.	.12	@	.12½
Truck, Heavy Gravity lb.	.05¾	@	.06¼
Truck, Light Gravity lb.	.06¼	@	.06½

Miscellaneous

Mechanical blends lb.	.04	@	.04½

Scrap Rubber

(Delivered Akron Mills)

Continued demand from reclaimers combined with the usual tightening up of supplies during the Winter months has led to slightly higher prices on several grades of scrap, the larger advances being in tube stocks. Dealers are prepared for a long pull based on current activity and rising crude rubber prices. Current quotations follow:

(Prices to Consumers)

Auto tire peelings ton	19.00	@	20.00
Mixed auto ton	14.00	@	17.00
Beadless tires ton	18.00	@	20.00
Clean solid truck tires ton	28.00	@	30.00
Boots and shoes ton	17.50	@	20.00
Arctics, untrimmed ton	12.50	@	15.00
Inner tubes, No. 1 lb.	.10	@	.12
Inner tubes, No. 2 lb.	.05½	@	.05¾
Inner tubes, Red lb.	.05⅜	@	.05½

Cotton

With the exception of a few trading days in mid December when publication with regard to the disposal by the Government of its remaining 3,000,000 bales resulted in an irregular and widely fluctuating market, cotton prices have been comparatively steady. High for the period since our last report was 13.07 on January 7th; low, 12.71 on December 22nd. The 13.07 quotation is within a few points of the year's high. Cotton has not kept pace with the advance of other commodities because of the export situation, American exports running over 500,000 bales behind last season. The long maritime strike is partially to blame for this situation. Prices may enter higher channels shortly, however, when the CCC loan cotton will be placed for sale. The expanding business in the textile industry is also expected to have an early favorable effect on the cotton market. The Government is expected to cut the price on the lower grades of cotton to enable domestic growers to more evenly compete with foreign growths and prices. Quotations for middling uplands on the N. Y. Cotton Exchange follow:

	Dec. 8	January 11		
	Close	High	Low	Close
March	12.11	12.45	12.40	12.43
June	11.89	12.27	12.27	12.27
September	——	11.97	11.97	11.97

Tire Fabrics

(Prices Net at the Mill)

Peeler, carded, 23/5/3 lb.	.34½	@	.35
Peeler, carded, 23/4/3 lb.	.35½	@	.36
Peeler, carded, 15/3/3 lb.	.32½	@	.33
Peeler, carded, 13/3/3 lb.	.31½	@	.32
Egyptian, carded, 23/5/3 lb.	.45½	@	.46
Egyptian, combed, 23/5/3 lb.	.50	@	.50½
CHAFERS			
Carded, American, 1 1/16" lb.	.33½	@	.34½
Carded, American, 1" lb.	.29	@	.33

Sheetings

48x40	36 in.	5.50 lb.	—	@ .06¼
40x40	36 in.	6.15 lb.	—	@ .06⅞
40x36	36 in.	6.50 lb.	—	@ .05⅞
48x48	40 in.	2.50 lb.	—	@ .11¾
48x48	40 in.	2.85 lb.	—	@ .10⅜
56x60	40 in.	3.60 lb.	—	@ .09¾
48x44	40 in.	3.75 lb.	—	@ .08¼
44x40	40 in.	4.25 lb.	—	@ .07½

Ducks

Enameling (single filling) lb.	.27	@	.31
Belting and Hose lb.	.28	@	—
Single filling, A grade lb.	.12½	@	.14¼
Double filling lb.	.13	@	.15

Closing Rubber Prices on New York Commodity Exchange, Inc.

No. 1 Standard Contract of 10 tons

FROM DECEMBER 9 TO JANUARY 9

Date	Spot	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Sales
Dec. 9	19.03	18.90	18.91	18.93	18.99	18.95	18.95	18.95	18.86	18.86	18.85	18.84	18.84		165
10	19.13	19.00	19.01	19.03	19.10	19.07	19.05	19.00	18.95	18.93	18.90	18.90	18.90		126
11	19.00	18.86	18.88	18.88	18.93	18.88	18.86	18.82	18.79	18.78	18.77	18.75	18.75		176
12	18.97	18.87	18.89	18.89	18.97	18.88	18.87	18.85	18.83	18.82	18.82	18.81	18.80		70
13	——	——	——	——	——	——	——	——	——	——	——	——	——		——
14	19.22	19.10	19.10	19.10	19.20	19.16	19.14	19.11	19.07	19.05	19.05	19.04	19.04		227
15	19.90	19.81	19.83	19.83	19.91	19.85	19.82	19.79	19.77	19.77	19.77	19.73	19.73		468
16	20.18	20.11	20.14	20.15	20.20	20.10	20.08	20.00	19.94	19.90	19.87	19.83	19.81		355
17	20.21	20.27	20.30	20.30	20.32	20.24	20.21	20.14	20.06	20.04	20.03	20.00	20.00		363
18	20.34	20.26	20.30	20.30	20.35	20.30	20.28	20.25	20.23	20.15	20.11	20.08	20.08		291
19	20.41	20.33	20.36	20.36	20.41	20.35	20.32	20.28	20.25	20.22	20.20	20.21	20.19		74
20	——	——	——	——	——	——	——	——	——	——	——	——	——		——
21	20.28	20.23	20.28	20.28	20.33	20.28	20.22	20.20	20.20	20.16	20.13	20.11	20.10		74
22	20.38	20.33	20.39	20.39	20.43	20.36	20.30	20.25	20.20	20.18	20.16	20.14	20.12		128
23	20.90	20.95	21.00	21.01	21.01	20.95	20.89	20.80	20.71	20.68	20.63	20.60	20.58		640
24	21.58	21.57	21.62	21.64	21.67	21.60	21.50	21.40	21.30	21.26	21.22	21.21	21.21		348
25	——	——	——	——	——	——	——	——	——	——	——	——	——		——
26	——	——	——	——	——	——	——	——	——	——	——	——	——		——
27	——	——	——	——	——	——	——	——	——	——	——	——	——		——
28	22.97	23.14	23.15	23.17	23.20	23.05	22.92	22.70	22.50	22.44	22.38	22.36	22.33		702
29	22.41	——	22.35	22.35	22.35	22.29	22.20	22.07	21.94	21.94	21.94	21.94	21.94		418
30	21.29	——	21.45	21.45	21.49	21.39	21.25	21.24	21.18	21.12	21.05	21.00	21.00		411
31	21.10	——	21.30	21.30	21.31	21.23	21.10	21.09	20.90	20.85	20.84	20.80	20.80		384
Jan. 1	——	——	——	——	——	——	——	——	——	——	——	——	——		——
2	——	——	——	——	——	——	——	——	——	——	——	——	——		——
3	——	——	——	——	——	——	——	——	——	——	——	——	——		——
4	20.55	——	20.55	20.59	20.63	20.60	20.53	20.48	20.44	20.39	20.32	20.30	20.30	20.30	354
5	20.81	——	20.80	20.83	20.87	20.81	20.75	20.74	20.73	20.69	20.65	20.60	20.60	20.60	268
6	21.56	——	21.60	21.64	21.67	21.61	21.57	21.50	21.45	21.41	21.45	21.34	21.34	21.34	442
7	21.93	——	22.00	22.02	22.04	21.97	21.89	21.82	21.76	21.73	21.70	21.66	21.66	21.66	277
8	21.85	——	21.80	21.84	21.87	21.83	21.78	21.74	21.70	21.65	21.60	21.60	21.60	21.60	164
9	22.04	——	22.10	22.14	22.18	22.10	22.02	21.97	21.92	21.90	21.87	21.82	21.81	21.80	174

Rubber CHEMICAL Markets

NEW YORK, JANUARY 12, 1937

[All Quotations F.O.B. Works Unless Otherwise Noted]

ACCELERATORS

Organic			
A-1 (Thiocarbanilid)	lb.	.24 @	.28
A-5-10	lb.	.33 @	.36
A-7	lb.	.53 @	.65
A-11	lb.	.60 @	.75
A-16	lb.	.55 @	.65
A-19	lb.	.56 @	.75
A-32	lb.	.70 @	.80
A-77	lb.	— @	—
Aldehyde ammonia, crystals	lb.	.65 @	.70
Altax	lb.	— @	—
Captax	lb.		
Crylene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolyguanidine	lb.	.44 @	.47
Diphenylguanidine	lb.	.35 @	.37
El-Sixty	lb.	.55 @	.65
Ethylidene aniline	lb.	.45 @	.47½
Formaldehyde aniline	lb.	.37½ @	.42
Guantal	lb.	.42 @	.51
Heptene	lb.	.40 @	—
Hexamethylene-tetramine	lb.	.37 @	—
Lead Oleate, No. 999	lb.	.12 @	—
Witco	lb.	.12 @	—
Lithex	lb.	.18 @	.20
Methylenedianiline	lb.	.36 @	.37
Monex	lb.	3.25 @	—
Oxynone	lb.	.68 @	.80
Phenex	lb.	.50 @	.55
Pipsolene	lb.	1.60 @	1.85
R & H 40	lb.	.40 @	.41
R & H 50	lb.	.40 @	.41
R-2	lb.	1.50 @	1.80
Safex	lb.	1.20 @	1.25
SPDX	lb.	.75 @	—
Super-Sulphur No. 1	lb.		
No. 2	lb.		
Thiocarbanilid, drums	lb.	.24 @	.28
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.58 @	.60
Tuads	lb.		
Ureka	lb.	.62 @	1.00
Ureka B	lb.	.62 @	.75
Ureka C	lb.	.58 @	.69
Vulcanex	lb.		
Vulcone	lb.		
Vulcanol	lb.		
Z-88-P	lb.	.48 @	.60
Zimate	lb.		
Inorganic			
Litharge, domestic	lb.	.07 @	.07½
Magnesia, calcined, heavy	lb.	.04 @	—

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.37 @	.39
Ultramarine	lb.	.15 @	—
Browns			
Sienna, Italian	lb.	.06 @	'13
Umber, Turkey	lb	.04 @	.04½
Greens			
Chrome, light	lb.	.20 @	.30
medium	lb.	.21 @	.31
Chromium Oxide, bbl.	lb.	.19 @	.20
Guignet's Green	lb.	.70 @	—
Reds			
Antimony			
crimson, 15/17	lb.	.48 @	—
sulfur, free	lb.	.48 @	.60
Indian English	lb.	.09 @	.10
Domestic (Maroon)	lb.	.11 @	—
Red oxide, pure	lb.	.10 @	.12
Rub-Er-Red, f.o.b. Easton	lb.	.09¼ @	—
Whites			
Cryptone CB, No. 21	lb.	.05¾ @	.06
Cryptone, No. 19	lb.	.05¾ @	.06
Cryptone, ZS-20	lb.	.09 @	.09¼
Cryptone, ZS-86	lb.	.09 @	.09¼
Lithopone			
Albalith, black label—11	lb.	.04½ @	.04½
Azolith	lb.	.04¼ @	.04½
Rayox	lb.		
Titanox A	lb.	.16 @	.16¾
Titanox B	lb.	.05¾ @	.06
Titanox C	lb.	.05¾ @	.06
Zinc Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.05½ @	.05½
Anaconda, lead free	lb.	.05¼ @	.05½
Horsehead Lead Free Brand:			
Special—3	lb.	.05¼ @	.05½
XX Red—4	lb.	.05¼ @	.05½
XX Red—72	lb.	.05¼ @	.05½
XX Red—78		.05¼ @	.05½
XX Red—103	lb.	.05¼ @	.05½
U. S. P.—7, bbls.	lb.	.05¼ @	.05½
Kadox, black label—15	lb.	.05¼ @	.05½
Blue label—16	lb.	.05¼ @	.05½
Red label—17	lb.	.05¼ @	.05½
St. Joe, black label	lb.	.05¼ @	.05½
green label	lb.	.05¼ @	.05½
red label	lb.	.05¼ @	.05½
Zinc Oxide—French Process			
Florence White seal—7 bbls.	lb.	.06¾ @	.07
Green seal—8	lb.	.06¼ @	.06½
Red seal—9	lb.	.05¾ @	.06
Yellows			
Chrome	lb.	.11 @	.12
Ocher, dom. med.	lb.	.02¾ @	—

BLACKS

Arrow "Aerfloted" Specification	lb.	.0535 @	.0825
Bone, powdered	lb.	.05½ @	.12½
Carbon, compressed	lb.	.0535 @	.0825
uncompressed	lb.	.0535 @	.0825
"Certified," Cabot	lb.	.0535 @	.0825
Spherons	lb.	.0535 @	.0825
"Disperso"	lb.	.0535 @	.0825
Drop, bbls.	lb.	.05½ @	.14
"Excello," compressed	lb.	.0535 @	.0825
"Fumonex"	lb.	.03 @	.07
"Gastex"	lb.	.03 @	.07
Lampblack	lb.	.07 @	.12
"Micronex"	lb.	.0535 @	.0825
"Supreme"	lb.	.0535 @	.0825
Thermatomic—"P 33"	lb.	— @	—
"Thermax"	lb.	— @	—
United "Dixie" & "Kosmos"	lb.	.0535 @	.0825

COMPOUNDING MATERIALS

Aluminum Flake	ton.	21.85 @	24.50
Ammonia carbonate, lump	lb.	.10½ @	.12
Asbestine	ton	13.00 @	15.00
Barium carbonate (98-100%)	ton	56.50 @	61.50
Barium Dust	lb.	.05 @	.06
Barytes	ton	23.65 @	31.15
Basofor	lb.	.04½ @	—
Bentonite	lb.	.02 @	.03
Blanc fixe dry f.o.b. works	ton	70.00 @	75.00
Calcene	ton	37.50 @	45.00
Catalpo (fact.)	lb.	.02 @	—
Chalk, precipitated			
Suprex white, extra lt.	ton	45.40 @	60.00
heavy	ton	45.00 @	55.00
Clay, Kaolin, domestic	ton	7.50 @	15.00
Aerfloted, Suprex	ton	8.50 @	10.00
Congaree	ton	9.00 @	—
Dixie	ton		
Dixie, Jr.	ton		
McNamee	ton		
Par	ton		
Tensulite		15.00 @	—
Witco	ton	8.50 @	9.00
Cotton Flock	lb.	.11 @	.15
Glues, extra white	lb.	.28 @	.30
medium white	lb.	.14 @	.19
Kalite No. 1	ton	30.00 @	55.00
Kalite No. 3	ton	40.00 @	65.00
Magnesium carbonate	lb.	.08 @	—
Mica	ton	35.00 @	—
Pyrax A	ton	— @	—
Rottenstone (powdered)	lb.	.02½ @	.05
Soapstone, powdered	ton	16.00 @	22.00
Starch, powdered	cwt.	3.19 @	3.39
Talc, domestic	ton	16.00 @	18.00
Whiting, commercial	ton	17.00 @	18.00
Columbia Filler	ton	9.00 @	14.00
English Cliffstone	ton	33.00 @	43.00
Sussex	ton		
Witco	ton	7.00 @	—
Wood Flour	ton	18.00 @	30.00
Zinc Carbonate	lb.	.10½ @	.11
Zinc Stearate	lb.	.27 @	—

MINERAL RUBBER

Black Diamond	ton	27.00 @	—
Genasco, solid (factory)	ton	25.00 @	27.00
Hard Hydrocarbon	ton		
Parmr, solid	ton	25.00 @	—
Pioneer, MR, solid	ton		
Pioneer-granulated	ton		

SPECIALTIES

Aromatics—Rodo	lb.		
Para-Dors No. 5145	lb.	2.00 @	—
Sunproof	lb.	.35 @	.37½
Sponge Paste	lb.	— @	.80
Tonox	lb.	.56 @	.60

SOFTENERS

Acids			
Acetic, 28%, bbls.	100 lb.	2.45 @	2.70
Nitric, 36 degrees	cwt.	5.00 @	6.00
Sulfuric, 66 degrees	ton	15.50 @	16.50
Acids, Fatty			
Laurex	lb.	.15 @	.16
Stearex	lb.	.08½ @	.11¾
Stearic, double pressed	lb.	.10 @	.11
Stearite	lb.	.09¼ @	.10⅛
Alkalies			
Caustic Soda, 76%	cwt.	3.05 @	—
Soda Ash, 58% C.L.	cwt.	1.25 @	—
Oils			
Corn, refined, bbls.	lb.	.11½ @	.11¾
Cottonseed, crude	gal.	.093 @	.10
Cycline Oil	gal.	.15 @	.28
Degras, bbls.	lb.	.05¼ @	.06¾
Fluxrite	lb.	.05½ @	.06½
Palm Lagos	lb.	.05 @	—
Niger	lb.	.04¾ @	—
Para-Flux	gal.	.17 @	—
Petrolatum, light	lb.	.03½ @	.03¾
Pigmentaroil, tank cars	gal.	.16 @	—
in drums	gal.	.22 @	.23½
Pine, steam distilled	gal.	.64 @	.65
dest. dist., drums	gal.	.44 @	.46
Rosin Oil, cmpd.	gal.	.40 @	—
Rubtack	lb.	.40 @	—
Seedine, c.l.	lb.	.07¾ @	—
Tackol	lb.	.08½ @	.18
Witco Palm Oil	lb.	.05½ @	—
Witco Softener	gal.	.15 @	—
Woburn No. 8, c.l.	lb.	.06 @	—
Wobonite, c.l.	lb.	.05 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.03½ @	—
coal tar	gal.	.07½ @	.08
hardwood	ton	15.00 @	—
pine, 200 lb. gr. wt.	bbl.	4.00 @	4.50
Rosin, grade K, 280 lb.	bbl.	7.60 @	—
Pigmentar, tank cars	gal.	.19 @	—
in drums	gal.	.25 @	.27
R. S. L. Resin	lb.	— @	—
Retort Pine Tar, drums	bbl.	12.00 @	13.00
Solvents			
Acetone, pure	lb.	.08½ @	—
Alcohol, denatured, methanol, No. 1 bbls.	gal.	.28 @	.39
Benzene, 90%	gal.	.18 @	.23
Beta-Trichlorethane	gal.	— @	—
Bondogen	lb.	— @	—
Carbon, bisulfide	lb.	.05¾ @	.08
Carbon, tetrachloride	lb.	.05¾ @	—
Dichlorethylene	lb.	.29 @	—
Dipentene, cml., drums	gal.	.41 @	.44
Dryolene (f.o.b. Okla.)	gal.	.10 @	.10½
Ethylene dichloride	lb.	.05½ @	.06½
Gasoline, steel bbls.	gal.	.16 @	—
Naphtha, solvent	gal.	.31 @	—
Plastogen	lb.		
Reogen	lb.		
Rub-Sol (f.o.b. Okla.)	gal.	.09 @	—
Trichlorethylene	lb.	— @	.09½
Turpentine, spirits	gal.	.50 @	—
dest. dist., drums	gal.	.47 @	—
Waxes			
Beeswax, white	lb.	.34 @	.35
Carnauba, yellow	lb.	.45 @	.46½
Ceresin, white, dom.	lb.	.08 @	.11
Montan, crude	lb.	.10¾ @	.11¾
Paraffin (c.l.—f.o.b. N. Y.)			
Yellow crude scale	lb.	.03½ @	—
White crude scale 124/126	lb.	.03 @	—
Refined, 122/127	lb.	.04½ @	—

ANTI-OXIDANTS

AgeRite, Gel	lb.		
HP	lb.		
Powder	lb.		
Resin	lb.		
White	lb.		
Albasan	lb.	.70 @	.75
Antox	lb.		
B-L-E	lb.	.57 @	.60
Flectol-H	lb.	.54 @	.65
Flectol White	lb.	.95 @	1.15
Flectol B	lb.	.54 @	.65
Neozone	lb.		
Oxynone	lb.	.66 @	.75
Perfectol	lb.	.67 @	.75
Retardex	lb.	.35 @	.40
Santoflex A	lb.	— @	—
Stabilite	lb.	.57 @	.62
Stabilite Alba	lb.	.70 @	.75
VGB	lb.	.55 @	.60

MOLD LUBRICANTS

Aresklene	lb.	— @	—
Cocoa Soapstock	lb.	.06 @	.08
Dipex	lb.	.06 @	.08
Lubrex	lb.	.25 @	.30
Rusco, f.o.b. Nitro	lb.	.12 @	.30
Sericite, f.o.b. N. Y.	ton	65.00 @	—
Soap Tree Bark, cut, sifted	lb.	.06 @	.08

FACTICE OR RUBBER SUBSTITUTES

Amberex	lb.	.23 @	—
Black	lb.	.08½ @	—
White	lb.	.095 @	.15
Brown	lb.	.095 @	.14
Duphax	lb.	.125 @	—

VULCANIZING INGREDIENTS

Sulfur Chloride, yellow (drs.)	lb.	.03½ @	.04½
Sulfur flour.			
Refined, 100% pure (bags)	cwt.	2.55 @	3.15
Commercial (bags)	cwt.	1.60 @	2.35
Telloy	lb.		
Vandex	lb.		

Crude Rubber
Latex and Guayule
Reclaimed Rubber
Tires and Tubes

STATISTICS OF THE INDUSTRY

Rim Production
Automobiles
Gasoline
Cotton Prices

U. S. Imports and Exports of Crude Rubber

YEARS	Gross Imports: Long Tons	Gross Imports: Total Declared Value	Gross Imports: Average Declared Value per pound Cents	Re-exports: Long Tons	Re-exports: Total Declared Value	Re-exports: Average Declared Value per pound Cents	Net Imports: Long Tons
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	305,817,807	54.63	17,671	22,470,583	56.77	395,667
1927	426,258	339,874,774	35.60	27,775	24,735,488	39.76	398,483
1928	439,731	244,854,973	25.03	32,159	18,128,361	25.17	407,572
1929	560,084	239,178,783	19.15	36,485	16,868,733	20.64	523,599
1930	482,082	139,134,330	12.89	30,205	9,316,205	13.77	451,877
1931	497,138	72,918,949	6.54	25,595	4,255,472	7.42	471,543
1932	409,584	31,936,459	3.47	20,929	2,015,612	4.30	388,655
1933	407,817	44,034,064	4.82	20,537	2,601,352	5.65	427,280
1934	449,322	97,898,519	9.73	23,848	5,770,109	11.23	425,615
1935	453,135	115,299,448	11.36	11,389	3,084,331	12.09	441,746
1935:							
Jan.	39,675	10,852,388	12.21	977	278,229	12.72	38,698
Feb.	47,271	12,291,242	11.61	1,845	480,440	11.62	45,426
March	45,350	11,801,152	11.62	1,868	486,379	11.62	43,482
April	39,735	10,096,487	11.34	1,096	285,903	11.64	38,639
May	29,278	7,171,025	10.98	793	202,402	11.39	28,485
June	31,240	7,523,598	10.75	524	153,595	13.10	30,716
July	46,987	11,666,577	11.08	489	132,173	12.06	46,498
August	48,249	10,419,056	11.56	476	130,464	12.23	39,773
Sept.	34,659	8,637,048	11.12	468	120,438	11.48	34,191
Oct.	35,091	8,742,222	11.12	651	188,518	12.92	34,440
Nov.	25,050	6,137,160	10.94	380	101,793	11.95	24,670
Dec.	38,417	9,930,710	11.54	1,821	523,997	12.85	36,596
1936:							
Jan.	32,255	8,624,060	11.94	732	229,129	13.98	31,523
Feb.	32,879	9,293,711	12.62	625	199,956	14.27	32,254
Mar.*	33,447	9,845,776	13.14	1,172	390,551	14.88	32,275
Apr.*	44,218	13,967,712	14.10	984	343,785	15.59	43,234
May*	35,578	11,460,157	14.38	1,589	580,021	16.30	33,989
June	36,376	12,073,632	14.82	2,469	904,669	16.35	33,907
July	38,178	12,763,200	14.92	1,383	510,075	16.47	36,795
Aug.	40,027	13,364,916	14.91	840	307,114	16.32	39,187
Sept.	48,233	16,644,668	15.41	656	244,554	16.64	47,577
Oct.	39,573	13,627,465	15.37	778	268,645	15.42	38,795
Nov.	36,782	12,788,704	15.52	676	241,982	15.99	36,106

* Revised.
Note: Total 1935 figures (revised) subject to further revision.

United States Imports of Guayule, Balata, Jelutong, Liquid Latex

(All Quantities in Long Tons)

	Guayule: Tons	Guayule: Dollars	Balata: Tons	Balata: Dollars	Jelutong: Tons	Jelutong: Dollars	Liquid Latex (1): Tons	Liquid Latex (1): Dollars
1924	1,356	536,392	464	568,456	6,165	1,237,100	2,157	864,059
1925	3,781	1,803,448	517	574,750	6,749	1,642,531	3,853	3,537,810
1926	4,305	2,562,096	354	327,213	7,263	3,127,757	3,388	4,680,386
1927	5,018	2,674,957	582	447,246	7,785	2,448,657	1,116	876,077
1928	3,075	1,755,685	731	430,855	7,552	2,540,059	4,167	2,185,579
1929	1,231	545,175	728	566,964	8,203	2,458,136	3,728	1,787,997
1930	1,096	347,388	501	422,684	5,907	1,403,244	4,449	1,506,804
1931	—	—	1,208	411,692	5,777	1,019,010	4,650	884,355
1932	—	—	702	147,403	4,607	616,596	5,085	601,999
1933	—	—	1,658	2,261,869	5,989	944,895	11,085	1,833,671
1934	402	75,349	1,054	438,209	4,988	943,752	13,070	3,633,253
1935	468	86,835	626	188,384	5,747	1,063,126	13,553	3,782,222
1935:								
Nov.	70	11,931	39	11,706	269	50,657	1,023	261,668
Dec.	91	15,317	62	18,269	414	71,885	1,395	391,386
1936:								
Jan.	70	13,182	30	8,924	656	133,948	1,667	474,682
Feb.	75	14,127	100	34,389	396	84,635	1,459	406,985
Mar.	40	7,605	65	25,590	378	70,560	1,427	417,704
April	103	19,469	38	15,232	751	146,548	1,612	522,049
May	88	16,698	59	21,217	521	114,099	1,472	490,769
June	97	18,380	33	13,671	767	186,274	1,897	657,311
July	96	18,168	44	15,314	556	106,676	1,665	579,895
Aug.	146	37,147	72	23,715	321	64,769	1,761	602,992
Sept.	106	29,335	21	9,846	418	85,624	1,800	692,810
Oct.	114	31,489	11	4,815	452	102,485	1,392	500,817
Nov.	159	43,980	43	19,408	405	91,538	1,631	578,729

(1) Weight given in pounds of dry rubber contained in latex.
Note: Total 1935 figures (revised) subject to further revision.

U. S. Consumption of Crude Rubber

(Rubber Manufacturers' Association statistics raised to 100 per cent—All figures in long tons)
(All Quantities in Long Tons)

	Figures on Monthly Basis: 1929	1930	1931	1932	1933	1934	1935	1936
Jan.	43,002	36,194	28,557	29,648	22,645*	39,190*	47,103	48,506
Feb.	41,594	33,302	28,797	31,821	21,392*	40,515*	43,187	36,746
Mar.	44,730	35,540	32,788	29,505	17,483*	47,003*	42,620	42,703
Apr.	47,521	39,686	33,321	27,518	25,928	44,853*	44,247*	51,897
May	49,233	39,386	37,817	30,957	44,074	42,918*	41,101*	50,482
June	43,227	34,195	37,916	41,475	50,743*	40,147*	36,156*	52,636
July	41,526	29,508	31,397	29,976	49,614*	32,553*	35,917*	48,127
Aug.	38,274	30,850	27,586	23,721	44,428*	33,216*	38,775*	46,657
Sept.	34,707	25,515	23,638	23,847	35,281*	30,258*	37,086*	46,330
Oct.	34,800	27,516	22,277	22,286	31,543*	31,253*	41,969*	49,509
Nov.	27,659	23,691	22,943	23,231	28,831*	34,748*	42,310*	50,503
Dec.	25,531	21,687	21,409	18,015	28,757*	36,569*	42,942	
Tot.	469,804	375,980	348,986	332,000	400,719*	453,223*	493,880*	

* Revised.

Reclaimed Rubber in the United States

(All Quantities in Long Tons)

Year	Production	Consumption: Tons	Consumption: % to Crude	Stocks*	Year	Production	Consumption: Tons	Consumption: % to Crude	Stocks*
1926	180,582	164,500	45.9	23,213	1931	133,351	124,126	33.9	19,257
1927	189,144	178,471	47.6	24,980	1932	75,608	77,504	23.4	16,354
1928	208,516	223,000	50.4	24,785	1933	99,560	81,602	19.9	20,746
1929	218,954	226,588	48.4	27,464	1934	110,010	100,597	22.2	23,079
1930	157,967	153,497	40.8	22,000	1935	122,948	112,712	22.7	25,069

Figures on Monthly Basis									
1935:									
Jan.	10,465	11,261	23.9	22,291	July	8,421	8,396	23.4a	17,810
Feb.	10,072	9,374	23.3	22,989	Aug.	9,557	8,795	22.7a	18,272
Mar.	10,549	9,741	22.9	20,637	Sept.	9,041	8,764	23.6a	18,260
Apr.	10,315	10,466	23.7a	18,716a	Oct.	11,926	9,662	23.0a	19,640
May	10,223	9,938	24.2a	18,541	Nov.	11,482	9,084	21.2	21,478
June	8,590	8,710	24.1a	17,932	Dec.	12,307	8,521	19.8	25,069
1936:									
Jan.	11,665	10,039	20.7	26,145	July	12,330	11,816	24.6	22,602
Feb.	10,188	7,366	20.1	28,267	Aug.	12,856	10,993	23.6	23,750
Mar.	10,712	8,767	20.5	29,161	Sept.	12,959	11,170	24.1	24,950
April	11,382	10,333	19.9	22,274	Oct.	14,737	12,606	25.7	26,389
May	11,512	10,396	20.6	22,852	Nov.	14,357	12,029	23.8	28,135
June	11,935	11,548	21.9	22,738	Dec.	.....	.....	...	.....

* Stocks on hand at the end of month or year.
a Revised.

U. S. Consumption of Gasoline

(Bureau of Mines Statistics)
(In Thousands of Barrels of 42 Gallons)

	1934*	1935*	1936		1934*	1935*	1936
January	29,489	28,062	32,553	August	39,105	42,836	46,081
February ...	25,310	26,432	27,401	September .	34,669	37,862	44,346
March	30,577	31,997	35,871	October	37,674	41,401	44,253
April	32,736	36,082	38,825	November ..	34,998	35,956	39,919
May	38,071	39,095	42,007	December ..	30,581	33,734	
June	36,430	37,890	44,630				
July	37,466	41,209	46,692	Total	...407,106	432,556	

* Revised on basis of final annual figures issued by Bureau of Mines.

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total		Total		Total
1924	21,863,311	1928	24,247,282	1932	6,261,336
1925	26,001,664	1929	24,141,502	1933	8,713,962
1926	24,199,524	1930	17,364,096	1934	12,255,118
1927	19,700,003	1931	11,253,800	1935	18,664,356

1936:		1936:		1936:	
January ...	1,877,448	May	1,959,425	September ..	1,104,404
February ..	1,260,590	June	1,876,446	October ...	1,846,750
March	1,840,723	July	1,716,463	November ..	2,173,408
April	2,258,296	August	934,595	December ..	1,941,550

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1934																																
September				15⅝	15⅛	15⅞	15¾	15¾		15⅝	15⅛	15⅞	15⅝	15⅝	15⅝			15⅞		15⅞	15⅞	15⅛		15⅛	15⅛	15⅝	15	14⅞	14⅛			15⅜
October	14½	14½	13⅞	14	13⅛	13⅞	13⅝	14	13⅝	13⅞	14⅛	14⅜	13⅞	13⅞	13⅞	14½	14⅞	14⅞	14⅛	14	13⅞	14⅛	14⅛	14⅛	13⅞	13⅞	13⅞	13⅞	14⅛	13⅞	13	14
November	13⅜	13⅜	13	13	13	13⅜	13⅜	13⅜	13¾	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	12⅝	13	13	13	13	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	13⅛	13⅛	13⅜	13
December	13⅛	12⅞	12⅞	12⅞	13	13⅜	13⅜	13⅜	13⅜	12⅞	12⅞	12⅞	12⅞	12⅞	12⅞	12⅛	12⅞	12⅞	12⅞	12⅞	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅞	12⅞
1935																																
January	13½	13½	13½	13½	13½	13¾	13¾	13¾	13⅝	13⅝	13⅝	13¾	13⅝	13¾	12⅞	13⅛	13⅛	13⅛	13	13	13	12⅛	12⅞	12⅛	12⅛	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝
February	13⅛	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13	12⅞	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13	13	13	13	13	13	13	13
March	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12	12⅝	11⅝	11⅝	11⅝	11⅝	11	11⅛	11⅛	11⅛	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝
April	11⅜	11⅜	11⅜	11⅜	11	11	11	10⅝	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛
May	11½	11½	11½	11½	11½	11½	11½	11½	11½	11½	11½	11½	11½	11½	11½	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜
June	12⅛	12⅛	12⅛	12½	12½	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝
July	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛
August	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛
September	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜
October	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜
November	13¼	13⅛	13⅛	13⅛	12⅞	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛
December	13⅛	13⅛	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜
1936																																
January	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
February	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
March	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
April	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
May	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
June	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
July	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
Aug.	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
Sept.	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
Oct.	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
Nov.	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
Dec.	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
1937																																
Jan.	13½	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1929

Year	Cents	Year	Cents	Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15	1922	17.50	1926	48.50
1911	141.30	1915	65.85	1919	48.70	1923	29.45	1927	37.72
1912	121.60	1916	72.50	1920	36.30	1924	26.20	1928	22.48
1913	82.04	1917	72.23	1921	16.36	1925	72.46	1929	20.55

Average Monthly Price per Pound Since 1930

	1930 Cents	1931 Cents	1932 Cents	1933 Cents	1934 Cents	1935 Cents	1936 Cents
Jan.	15.24	8.34	4.38	3.08	9.32	13.10	14.35
Feb.	15.85	7.70	4.03	2.95	10.45	12.92	15.48
Mar.	15.34	7.71	3.35	3.01	11.01	11.51	15.89
Apr.	14.93	6.43	3.02	3.56	12.10	11.55	15.98
May	14.24	6.49	3.09	4.95	13.26	12.05	15.62
June	12.45	6.35	2.66	6.15	13.51	12.57	15.85
July	11.24	6.37	2.89	8.01	14.60	12.10	16.49
Aug.	9.96	5.38	3.63	7.31	15.47	11.98	16.25
Sept.	8.28	5.08	3.84	7.30	15.36	11.55	16.46
Oct.	8.20	4.87	3.65	7.64	13.96	12.62	16.55
Nov.	9.01	4.65	3.44	8.66	13.04	13.15	17.97
Dec.	9.05	4.64	3.24	8.87	12.98	13.28	20.01
Average for Year	11.98	6.17	3.49	5.96	12.92	12.37	16.41

London Closing Prices of Ribbed Smoked Sheets

(In Pence Per Pound)

Day	1936 Oct.	1936 Nov.	1936 Dec.	1937 Jan.	Day	1936 Oct.	1936 Nov.	1936 Dec.	1937 Jan.
1	7¾	—	8 13/16	—	17	7⅞	8 1/16	9¾	
2	7¾	8 1/16	8⅞		18	—	8 1/16	9 15/16	
3	7 15/16	8 1/16	8 15/16		19	7⅞	8 5/16	9	
4	—	8⅜	9	9¾	20	7⅞	8 1/16	—	
5	7 13/16	8 5/16	9⅛	10	21	7 15/16	8 1/16	9¾	
6	7⅞	8 1/16	—	10 7/16	22	7 15/16	—	9⅞	
7	7	8 1/16	9⅛	10⅜	23	7⅞	8⅝	10 1/16	
8	7 13/16	—	9⅛	10 7/16	24	7⅞	8⅝	10⅜	
9	7⅞	8 1/16	9	10 1/16	25	—	8 1/16	—	
10	7⅞	8⅝	9 1/16	10 1/16	26	7⅞	8 1/16	—	
11	—	8⅞	9 1/16		27	—	8 1/16	—	
12	7 13/16	8 1/2	8 13/16		28	8	8 1/16	11⅛	
13	7 15/16	8 1/2	—		29	—	—	10 1/16	
14	7⅞	8⅞	9		30	8⅛	8¾	10⅜	
15	7⅞	—	9⅛		31	8¼	—	10 1/16	
16	7⅞	8⅝	9 1/16						

Average Monthly Price Per Pound

Month	1933 Pence	1934 Pence	1935 Pence	1936 Pence	Month	1933 Pence	1934 Pence	1935 Pence	1936 Pence
Jan.	2.264	4.429	6.434	6.758	Aug.	3.811	7.401	5.696	7.581
Feb.	2.093	4.920	6.292	7.255	Sept.	3.728	7.409	5.508	7.577
Mar.	2.099	5.136	5.745	7.450	Oct.	3.957	6.806	6.130	7.898
Apr.	2.323	5.712	5.604	7.502	Nov.	4.096	6.294	6.308	8.572
May	2.966	6.207	5.822	7.335	Dec.	4.200	6.295	6.340	9.580
June	3.392	6.245	6.027	7.352	Average for				
July	3.860	7.053	5.801	7.696	Year	3.233	6.159	5.976	7.713

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Date	1936 Nov.	1936 Dec.	1937 Jan.	Date	1936 Nov.	1936 Dec.	1937 Jan.	Date	1936 Nov.	1936 Dec.	1937 Jan.
1	—	12.58	—	11	—	12.87	13.03	22	—	12.71	
2	12.08	12.63	—	12	12.10	12.98		23	12.10	12.83	
3	—	12.64	—	13	12.15	—		24	12.13	12.99	
4	12.25	12.64	12.91	14	12.18	13.03		25	12.25	—	
5	12.34	12.56	12.91	15	—	12.92		26	—	—	
6	12.27	—	12.96	16	12.29	12.92		27	12.27	—	
7	12.35	12.60	13.07	17	12.30	12.75		28	12.36	13.11	
8	—	12.71	13.01	18	12.20	12.80		29	—	12.95	
9	12.24	12.84	13.06	19	12.23	12.81		30	12.43	13.04	
10	12.14	12.98	—	20	12.18	—		31	—	13.06	
				21	12.22	12.78					

Average Monthly Price Per Pound

	1933 Cents	1934 Cents	1935 Cents	1936 Cents		1933 Cents	1934 Cents	1935 Cents	1936 Cents
Jan.	6.23	11.25	12.70	11.91	Aug.	9.55	13.40	11.48	12.28
Feb.	6.05	12.28	12.58	11.53	Sept.	9.64	13.00	10.80	12.31
Mar.	6.39	12.30	11.63	11.43	Oct.	9.58	12.48	11.28	12.30
Apr.	7.02	11.80	11.73	11.71	Nov.	10.04	12.53	12.01	12.23
May	8.64	11.44	12.25	11.68	Dec.	10.17	12.76	11.99	12.83
June	9.47	12.20	11.89	12.02	Average for				
July	10.76	12.84	12.26	13.11	Year	8.63	12.36	11.88	12.11

World Stocks of Crude Rubber

(All figures are in long tons)

ON HAND OR AFLOAT TO THE U. S.

At End of	ON HAND 1934	ON HAND 1935	ON HAND 1936	AFLOAT 1934	AFLOAT 1935	AFLOAT 1936	ON HAND AND AFLOAT 1934	ON HAND AND AFLOAT 1935	ON HAND AND AFLOAT 1936
Jan.	370,039	349,446	285,054*	45,768	42,066	43,870	415,807	391,512	328,924*
Feb.	358,423	340,264	282,902*	53,063	42,969	46,532	411,486	383,233	329,434*
Mar.	353,078	340,284	276,823*	54,722	44,485	58,935	407,800	384,769	335,758*
Apr.	351,073	337,586	264,228*	56,251	37,651	47,678	407,324	375,237	311,906*
May	350,935	322,558	248,317	57,921	44,375	48,860	408,856	366,933	297,177
June	358,461	324,218	245,886	46,698	55,581	47,228	405,159	379,799	293,114
July	365,072	334,692	234,498	45,869	49,018	60,343	410,941	383,710	294,841
Aug.	363,711	334,106	229,056	40,278	47,724	63,597	403,989	381,830	292,653
Sept.	360,623	331,121	228,477	38,831	43,413	62,240	399,454	374,534	290,717
Oct.	362,571	322,857	219,553	38,247	49,913	67,825	400,818	371,770	287,378
Nov.	362,826	308,993	212,515	38,625	46,588	73,691	401,451	355,581	286,206
Dec.	355,000	303,000		47,644	39,094		402,644	342,094	

(Rubber Manufacturers' Association figures raised to 100%)

* Revised.

Note: Complete figures for 1934 and 1935 were revised by the R.M.A. on May 1, 1936.

STOCKS IN GREAT BRITAIN

(No. of Tons in Wharves and Warehouses, not including Latex)

At end of	London 1934	London 1935	London 1936	Liverpool 1934	Liverpool 1935	Liverpool 1936
January	38,570	81,807	84,791	51,702	66,405	77,188
February	38,752	87,605	79,757	52,730	67,983	77,138
March	40,501	92,664	74,779	53,813	69,218	72,823
April	42,413	94,361	68,932	53,695	70,584	71,388
May	42,190	95,722	61,349	54,007	71,927	69,150
June	45,674	98,077	55,993	54,028	73,131	66,173
July	50,490	99,226	49,575	55,414	74,915	63,715
August	48,953	101,574	45,749	56,246	75,584	62,367
September	56,193	101,198	44,364	56,848	76,263	59,485
October	63,079	94,749	40,777	57,818	76,400	55,738
November	67,656	90,542	37,495	60,106	76,301	51,184
December	72,285	86,551		62,505	77,589	

(Figures from the Rubber Trade Association of London)

STOCKS IN OTHER CENTRES

(Figures from Statistical Bulletin of the Int'l Rubber Regulation Committee)

At end of 1936	Penang and Singapore [1]	Malaya [2]	Ceylon [3]	Holland	Para and Manaos
January	31,195	35,231*	4,504*	1,568	4,496
February	38,421	34,109	4,475	1,532	6,199
March	29,322	31,723	3,866	1,547	4,864
April	32,200	34,090	3,123	1,497	4,873
May	26,687	33,179	3,379*	1,360	4,522
June	28,260	34,166	3,057	1,070	4,502
July	29,443	34,395	3,610	1,026	4,696
August	28,289	34,849	3,961	979	1,742*
September	26,936	33,351	3,930	....	1,817
September	26,936	33,351	3,930	911	1,817
October	24,593		3,490	773	1,820

[1] Dealers' and Port Stocks. [2] Inside Regulated Areas. [3] Dealers' Stocks Only.
* Revised.

RUBBER STOCKS AFLOAT

End of: 1935	Afloat for United States	Afloat for Europe	All Other * Afloat	Total * Afloat
November	46,588	26,250	16,162	89,000
December	39,094	25,200	18,706	83,000
End of: 1936:				
January	43,870	20,160	19,970	84,000
February	46,532	18,690	19,778	85,000
March	58,935	16,820	14,245	90,000
April	47,678	17,025	18,297	83,000
May	48,860	18,670	21,470	89,000
June	47,228	20,200	22,572	90,000
July	60,343	20,300	25,357	106,000
August	63,597	19,800	15,603	99,000
September	62,240	18,090	15,670	96,000
October	67,825	18,500	17,675	104,000
November	73,691	18,000	12,309	104,000

* *Total Afloat* is an arbitrary estimate based on 1½ months' shipments as adopted by the Department of Commerce. *All Other Afloat* is determined by subtracting the amount of stocks in transit to the United States and Europe from the estimated total.
P—Preliminary estimate.

TOTAL WORLD STOCKS

(Figures from the Survey of Current Business)

At end of	1931	1932	1933	1934	1935	1936
January	510,296	638,416	634,797	661,948	698,153	600,479*
February	516,123	626,819	626,227	663,308	686,195	599,355*
March	532,080	629,894	638,428	666,382	678,809	574,594*
April	531,832	630,803	629,159	658,796	677,006	558,583
May	528,855	627,474	626,537	689,239	677,569	532,411
June	533,021	595,712	613,055	672,804	671,525	511,931*
July	548,794	589,037	618,258	676,200	679,061	510,872*
August	555,931	597,274	617,449	674,702	680,644	492,439*
September	561,838	599,986	623,683	694,361	661,509	485,500
October	588,873	609,368	636,597	680,616	655,000	474,000*
November	605,684	614,342	642,968	684,408	623,300	
December	628,826	629,898	654,890	705,975	611,987*	
Monthly Average	553,513	615,752	630,171	677,395	666,729*	

* Revised.

U. S. Tire and Tube Statistics[1]

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1928	1929	1930	1931	1932	1933	1934	1935
Production	77,944	68,726	50,965	48,740	40,085	45,303	47,233	49,362
Shipments	74,296	69,395	53,638	50,061	40,251	44,094	46,597	50,183
Inventory [2]	13,624	11,838	9,003	7,775	7,644	8,888	9,455	8,196

Figures for Recent Months

	PRODUCTION 1934	PRODUCTION 1935	PRODUCTION 1936	SHIPMENTS 1934	SHIPMENTS 1935	SHIPMENTS 1936	INVENTORY 1934	INVENTORY 1935	INVENTORY 1936
Jan.	3,922	4,626	4,579	3,222	3,663	3,875	9,684	10,398	8,917
Feb.	4,335	4,383	3,577	3,285	3,287	3,211	10,725	11,530	9,263
Mar.	5,180	4,346	3,638	4,223	4,204	3,856	11,651	11,675	9,086
Apr.	4,470	4,512	4,854	4,438	5,144	4,903	11,981	11,003	9,033
May	4,456	4,175	4,971	5,332	4,067	5,832	11,127	11,131	8,175
June	4,342	3,910	5,610	5,228	4,262	5,792	10,219	10,755	7,831
July	3,353	3,532	5,465	4,157	5,447	5,744	9,437	8,850	7,746
Aug.	3,533	3,993	5,014	4,308	4,739	4,976	8,697	7,805	7,793
Sept.	2,936	3,787	4,981	3,183	3,303	3,836	8,419	8,288	9,005
Oct.	3,287	4,051	5,123	3,010	4,055	4,081	8,657	8,291	10,989
Nov.	3,341	3,997		3,191	3,930		8,779	8,249	
Dec.	3,778	4,051		3,109	4,081		9,455	8,196	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1928	1929	1930	1931	1932	1933	1934	1935
Production	80,180	68,829	52,420	48,333	36,891	42,556	46,228	47,879
Shipments	77,127	70,592	54,938	50,021	37,911	41,391	45,046	48,067
Inventory [2]	16,117	12,807	9,999	7,922	6,749	7,815	9,180	8,231

Figures for Recent Months

	PRODUCTION 1934	PRODUCTION 1935	PRODUCTION 1936	SHIPMENTS 1934	SHIPMENTS 1935	SHIPMENTS 1936	INVENTORY 1934	INVENTORY 1935	INVENTORY 1936
Jan.	3,551	4,259	4,592	3,199	3,722	4,168	8,403	9,621	8,623
Feb.	4,078	4,171	3,556	3,323	3,362	3,446	9,167	10,466	8,699
Mar.	5,194	4,123	3,787	4,118	4,168	3,796	10,244	10,406	8,692
Apr.	4,735	4,259	4,824	4,342	4,453	4,746	10,585	10,170	8,788
May	4,359	3,892	4,819	4,902	3,451	4,919	10,043	10,615	8,719
June	4,097	3,480	5,035	5,309	4,024	5,504	8,795	10,050	8,105
July	3,531	3,251	5,177	4,323	5,269	5,758	8,053	8,005	7,725
Aug.	3,680	3,894	5,039	4,198	4,556	5,136	7,555	6,939	7,621
Sept.	3,110	4,125	5,161	3,024	3,426	4,231	7,639	7,565	8,627
Oct.	3,219	4,435	5,397	2,689	3,987	4,108	8,151	8,053	9,977
Nov.	3,169	3,942		2,767	3,687		8,503	8,161	
Dec.	3,503	4,048		2,850	3,962		9,180	8,231	

(1) These figures have been adjusted to represent 100% of the industry based on reports received by the Rubber Manufacturers' Association which represent 80% for 1931-1932-1933; 97% for 1934-1935; 81% for 1936. All figures through September, 1936, were revised in December, 1936. Annual figures are more accurate.
(2) Held by manufacturers at end of period indicated.
(*) Revised.

Automobile Production

	United States Total	United States Passenger Cars	United States Trucks	Canada Total	Canada Passenger Cars	Canada Trucks	Grand Total
1928	4,357,384	3,826,613	530,771	242,382	196,737	45,645	4,599,944
1929	5,358,420	4,587,400	771,020	263,295	207,498	55,797	5,621,715
1930	3,355,986	2,814,452	540,534	154,192	125,442	28,750	3,510,178
1931	2,389,730	1,973,090	416,640	82,621	63,477	19,144	2,472,351
1932	1,370,678	1,135,493	235,187	60,816	50,718	10,098	1,431,494
1933*	1,920,057	1,573,512	346,545	65,924	53,855	12,069	1,992,126
1934*	2,753,111	2,177,919	575,192	116,852	92,647	24,205	2,869,963
1935	4,009,496	3,285,836	723,660	172,995	139,742	33,253	4,182,491
1935							
Nov.*	395,059	336,914	58,145	13,491	10,916	2,575	408,550
Dec.*	404,528	322,096	61,506	13,789	10,666	3,123	418,317
1936							
Jan.*	364,004	298,274	65,730	13,302	11,261	2,041	377,306
Feb.*	287,606	224,816	62,790	13,268	10,853	2,415	300,874
Mar.*	420,971	343,523	77,448	18,021	14,488	3,553	438,992
April	502,775	417,133	85,642	24,951	20,247	4,704	527,726
May	460,565	385,507	75,058	20,006	16,389	3,617	480,571
June*	452,955	375,894	77,061	16,400	13,126	3,274	469,355
July	440,999	372,402	68,597	10,475	8,192	2,283	451,474
August	271,291	209,754	61,537	4,660	3,051	1,609	275,951
Sept.	135,130	90,597	44,533	4,655	2,481	2,174	139,785
Oct.	224,628	190,688	33,940	5,361	4,592	769	229,989
Nov.	394,890	341,456	53,434	10,812	10,086	726	405,702

* Revised.
Note: U. S. figures represent factory sales; Canadian figures represent production.

Exports of Crude Rubber from Principal Producing Countries

(Long Tons)

	BRITISH MALAYA [1]								DUTCH EAST INDIES [6]						
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon [2]	India & Burma [3]	Sarawak [4]	British North Borneo [5]	Siam [6]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China [3]	Amazon Valley	All Other [6]	World Total [7]
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,415
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	514,487
1926	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,530
1927	371,322	182,845	188,477	55,356	11,321	10,923	6,582	5,472	55,297	77,815	142,171	8,645	28,782	15,633	606,474
1928	409,430	149,787	259,643	57,267	10,790	10,087	6,698	4,813	58,848	82,511	121,770	9,548	21,129	10,690	653,794
1929	574,836	163,092	411,744	81,584	11,663	11,077	7,381	5,018	65,990	87,789	134,037	9,696	21,148	6,767	853,894
1930	547,043	133,876	413,167	76,970	10,782	10,309	6,781	4,251	69,755	79,396	115,254	7,665	14,260	5,651	814,241
1931	519,740	125,506	394,234	61,769	8,470	10,451	6,247	4,218	75,952	87,747	116,009	11,696	12,121	3,292	792,203
1932	478,252	92,539	385,713	48,973	3,888	6,960	4,664	3,451	61,312	79,837	85,871	13,883	6,450	1,816	702,818
1933	573,412	167,377	406,035	63,351	4,527	10,874	7,555	7,765	73,851	91,861	149,659	18,394	9,883	2,737	846,312
1934	677,361	211,803	465,558	79,746	10,492	17,233	11,103	17,545	87,400	112,058	175,470	20,170	8,903	2,985	1,008,663
1935	590,522	176,705	413,817	53,584	13,134	20,850	8,868	28,051	57,479	78,362	135,247	29,949	11,125	5,055	856,245
1934:															
Nov.	51,140	8,759	42,381	6,756	501	953	941	1,356	7,621	7,123	5,338	2,356	1,017	334	76,676
Dec.	59,575	15,375	44,200	8,481	990	1,237	680	2,043	10,865	12,953	12,354	2,956	1,035	239	98,033
1935															
Jan.	56,720	17,142	39,578	5,202	2,269	1,630	1,222	2,614	3,812	5,371	8,704	2,650	1,196	460	74,719
Feb.	50,593	17,676	32,917	5,556	731	1,887	760	2,288	4,395	7,663	15,194	2,076	636	254	74,154
Mar.	47,407	13,437	33,970	3,181	701	1,901	773	2,076	5,592	7,950	7,973	1,472	740	526	66,855
Apr.	53,360	16,029	37,331	2,976	370	1,895	846	1,661	5,574	6,873	12,683	2,827	963	185	74,957
May	51,353	23,720	27,633	4,223	674	2,323	848	2,752	6,217	7,931	21,058	2,138	832	315	76,920
June	49,751	18,637	31,114	3,525	1,077	2,031	603	2,869	5,698	8,258	14,168	2,021	659	393	72,416
July	48,975	11,257	37,718	4,106	580	1,870	1,164	1,939	5,899	5,664	8,373	2,015	427	407	70,162
Aug.	51,873	10,978	40,895	5,683	724	759	566	2,062	4,661	6,923	8,875	2,451	1,150	442	74,541
Sept.	51,247	10,418	40,829	3,970	681	1,797	421	2,278	4,089	5,862	9,422	2,248	1,017	493	73,107
Oct.	48,258	19,364	28,894	5,932	1,198	2,168	1,040	2,622	3,937	6,698	16,432	2,748	1,240	462	73,371
Nov.	43,147	10,518	32,629	4,288	1,806	1,356	455	2,155	3,724	3,963	8,511	2,392	936	587	62,802
Dec.	37,838	7,529	30,309	4,942	2,323	1,233	171	2,735	3,881	5,206	3,854	4,911	1,329	531	61,425
1936:															
Jan.	39,101	12,582	26,519	4,131	1,293	2,317	938	1,665	4,315	6,347	9,270	2,449	1,606	613	61,463
Feb.	38,436	18,857	19,579	3,664	1,382	2,111	529	3,663	4,789	6,643	15,479	2,892	1,201	832	62,764
Mar.	46,552	12,026	34,526	4,336	1,324	1,848	342	2,966	4,484	5,052	8,949	2,553	1,264	586	68,230
Apr.	35,999	14,698	21,301	3,172	1,255	2,053	869	1,596	4,895	6,446	12,612	2,417	1,056	693	58,365
May	46,568	12,527	34,041	2,560	1,115	2,354	517	2,293	4,258	6,015	10,743	2,340	956	594	67,786
June	40,049	15,026	25,023	3,780	1,253	1,386	461	3,737	4,577	6,519	14,370	2,733	943	584	65,366
July	53,114	19,038	34,076	3,496	1,379	1,399	1,035	3,734	6,133	8,578	17,653	2,737	973	640	81,833
Aug.	43,506	13,361	30,145	4,019	809	2,541	656	3,284	4,978	7,353	11,924	3,017	529	791	70,046
Sept.	44,110	10,039	34,071	5,390	685	1,139	537	3,259	4,531	6,241	9,981	3,503	1,030	720	71,087
Oct.	46,543	12,960	33,583	5,624	1,200	2,143	1,086	3,349	6,477	8,145	12,881	3,874	1,255	764	80,381
Nov.	47,342	16,923	30,419	5,043	1,332	1,950	701	2,260	5,398	7,109	16,718	3,857	1,200	809	76,796
Dec.	38,749	9,758	28,991	4,377											

(1) Malayan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, 3,263 in 1926, 2,439 in 1927, 1,437 in 1928, 2,670 in 1929, and 1,274 in 1930. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons in 1924, 6 tons in 1925, 20 tons in 1926, about ½ ton in 1927, and 1 ton in 1928, and practically none in 1929, 1930 and 1931. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons in 1924, 2,239 tons in 1925, 44 tons in 1926, 84 tons in 1927, 1,459 tons in 1928, 1,302 tons in 1929, and 2,656 tons in 1930. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Belgium and Netherlands, and includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. * Figure is provisional; final figure will be shown when available.

NOTE: THE FIGURES FOR 1933 ARE REVISED AS OF JANUARY 25, 1935 AND REPRESENT FINAL FIGURES

Net Imports of Crude Rubber into Principal Manufacturing Countries

(*Long Tons*)

	United States [1]	United Kingdom	France (h)	Germany	Canada (ac)	Japan (da)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	238,407	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	343,808
1920	249,530	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2,008	567	371,409
1921	179,736	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,620
1922	296,594	11,724	24,352	27,546	9,207	15,934	6,430	2,493	2,643	172	—3,807	1,778	589	567	396,222
1923	301,527	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	409,173
1924	319,103	—11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	—807	3,178	944	1,370	416,203
1925	385,596	4,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	520,274
1926	399,981	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	617,957
1927	403,472	60,249	34,271	38,892	26,405	20,521	11,381	12,018	9,490	6,482	636	4,224	2,055	2,672	632,768
1928	407,572	4,846	36,498	37,855	30,447	25,621	12,433	15,134	8,430	7,958	2,243	4,418	3,178	3,138	599,771
1929	528,608	122,675	55,093	49,275	35,453	34,284	17,169	11,774	15,886	9,445	3,022	6,440	864	4,650	894,638
1930	458,036	120,069	68,503	45,488	28,793	33,039	18,639	16,387	5,354	10,635	2,924	7,710	2,400	4,468	822,445
1931	475,993	86,170	46,466	39,688	25,261	43,483	10,149	30,671	7,649	11,009	2,220	6,360	2,605	7,717	794,641
1932	393,844	44,086	42,506	45,121	20,917	56,027	14,469	30,637	12,576	9,519	2,851	7,262	4,359	9,444	693,618
1933	398,365	73,335	61,953	54,120	19,332	66,831	19,341	29,830	13,534	11,166	1,243	7,831	5,520	10,402	772,803
1934	439,172	158,482	49,560	59,330	28,439	69,905	21,398	47,271	9,642	9,115	3,758	12,418	6,900	10,999	926,389
1935	455,758	128,829	51,450	62,899	26,870	57,567	21,880		9,978	7,593	4,068	11,878	8,140	11,245	
1935															
May	29,962	12,498	3,828	6,049	3,929	5,429	935	1,937	671	982	272	853	815	774	68,934
June	31,410	10,253	3,210	4,551	1,435	3,373	1,831	3,087	496	1,065	446	780	745	604	66,286
July	47,694	9,454	3,247	4,929	1,319	4,484	1,298	1,823	520	572	157	800	548	185	77,030
Aug.	41,057	14,120	4,508	4,790	2,814	4,453	916	1,227	655	528	413	820	752	673	77,726
Sept.	35,256	11,223	3,740	5,453	1,604	3,590	1,696	1,593	449	806	282	1,030	793	914	68,429
Oct.	35,770	3,184	5,175	6,074	812	4,727	2,500*	4,876	829	539	671	1,000	597	742	67,496
Nov.	25,756	2,942	4,731	6,258	4,389	4,361	2,000*	4,858	783	449	245	1,206	1,044	1,276	60,298
Dec.	38,072	4,779	5,522	4,823	2,567	6,112	2,500*		1,019	1,074	287	1,359	750	1,466	
1936:															
Jan.	33,260	4,573	6,755	5,545	1,759	4,355	1,500*	467	1,260	760	369	736	664	767	62,770
Feb.	33,789	1,271	6,264	5,257	1,900	2,786	1,000*	94	735	799	106	497	1,312	344	56,154
Mar.	33,743	—1,227	4,333	4,569	1,811	5,170	1,000*	4,376	819	1,033	339	754	1,113	410	58,243
April	44,948	2,097	4,250	5,497	1,079	4,929	1,500*	3,251	919	1,097	238	848	679	603	71,935
May	35,549	302	4,335	4,639	2,221	5,531	1,000*	4,220	1,034	698	103	657	500*	667	61,456
June	35,901	—1,493	4,846	5,698	2,042	4,567	1,500*	2,427	1,635	579	—27	650	500*	323	59,148
July	38,556	—766	4,621	6,837	2,274	5,126	2,000*	1,733	1,363	713	183	1,094	500*	495	64,729
Aug.	41,094	—1,581	4,513	6,556	3,781	4,305	1,500*	3,128	807	789	42	1,145	500*	989	67,440
Sept.	49,483	—12	4,393	6,006	2,393	5,195	1,500*	2,922	2,297	514	471	1,090	300*	624	77,176
Oct.	40,301	—87	4,752	7,232	3,110	6,600	1,500*	2,761	1,092	817	343	1,171	200*	1,026	
Nov.	37,897	—742		6,500							445				

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—Official statistics of rubber imports by Soviet Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. [1] United States imports of guayule are included in this compilation. * Figure is provisional; final figure will be shown immediately it becomes available.

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